JULY/AUGUST 2002

FAA Aviation News

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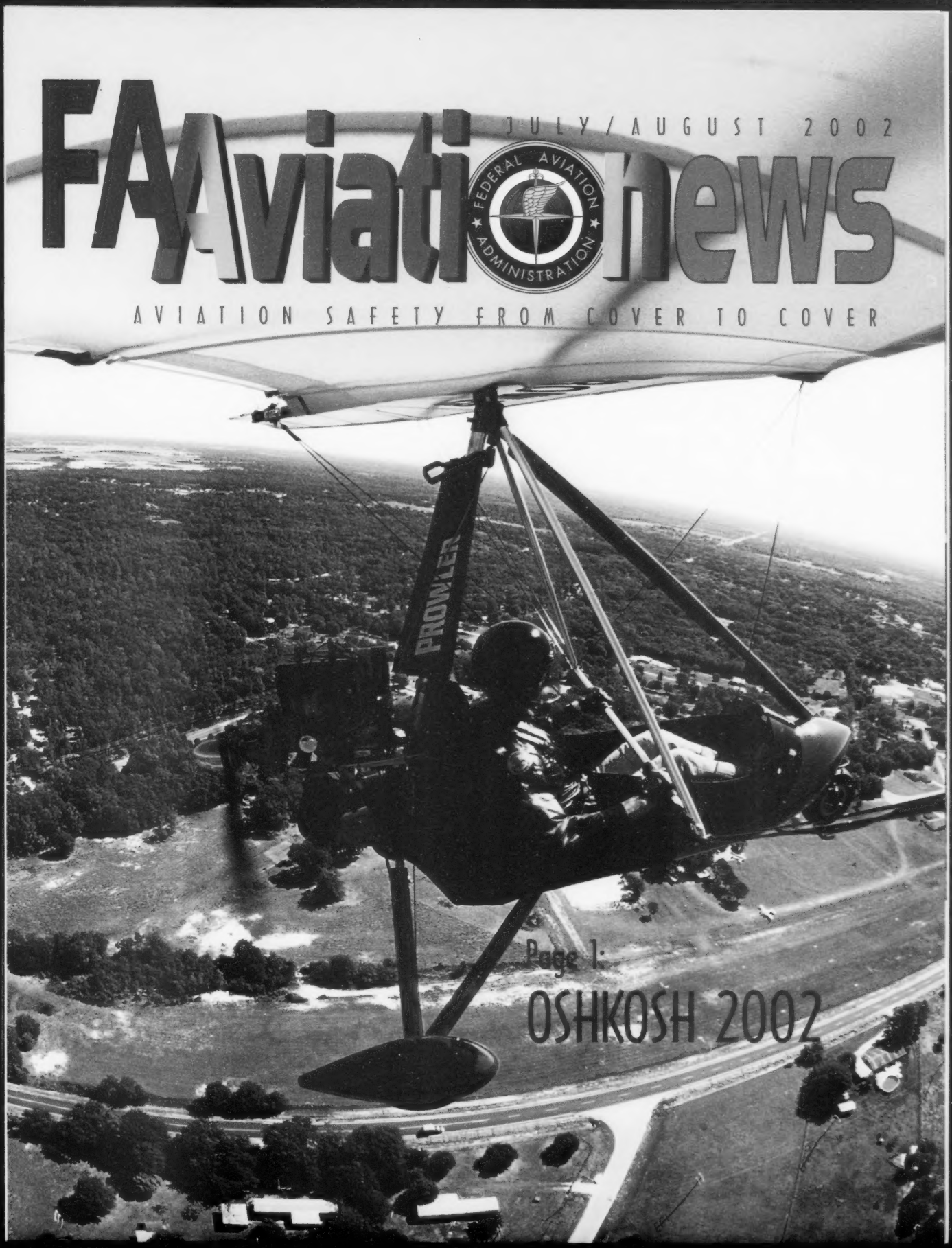

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OSHKOSH 2002

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FAA Aviation news

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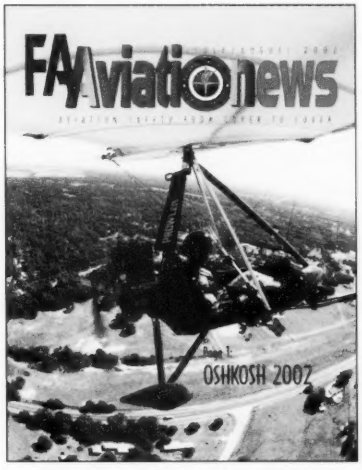


FRONT COVER: Sport pilot at AirVenture. (A Mike Steineke photo, courtesy of EAA.)

BACK COVER: Piper Malibu Meridian in flight. (Piper photo)

50TH AIRVENTURE OSHKOSH ★ 2002

EAA®

by H. Dean Chamberlain

The Experimental Aircraft Association's (EAA) annual fly-in and convention has reached a milestone. This is the 50th annual EAA gathering. The dates for AirVenture Oshkosh 2002 are July 23-29.

Held on Wittman Regional Airport in Oshkosh, Wisconsin this year's fly-in salutes air racing, military aircraft, and recreational aviation. According to EAA, this year's activities will include the official opening of the First Fly-In Area—a re-creation of EAA's first fly-in held in Milwaukee, Wisconsin in 1953. The new area will host several aircraft that were at the first fly-in, an opening day 50th birthday cake, plus other special activities designed to recognize the 50th anniversary.

No significant 50th anniversary should pass without a brief review of the events leading up to that anniversary. A review of past *FAA Aviation News* magazines and a current visit to the EAA's Internet web site, <www.eaa.org>, provided the following historical look back to the beginnings of EAA. The May/June 1987 *FAA Aviation News* published an interview with Paul H. Poberezny, Founder and (then) President of EAA.

In the interview he said, "The idea of establishing an organization for amateur aircraft builders and restorers came to me in 1948 while I was building an airplane in the family garage at my home in Milwaukee. I held several informal meetings and discussions with other sport aviation enthusiasts on the subject, but we had to put the idea aside when I was called to Korea for a tour of duty as an USAF pilot. When I returned, we decided to try to capture the enthusiasm, skills, and dedication of a number of Milwaukee area amateur aircraft builders. Our first organizational meeting was held in January 1953.

"Eventually, it became possible to develop the first 'real' EAA Headquarters and Air Museum in the Milwaukee suburb of Hales Corner. The Headquarters building gave our organization permanent roots and a sense of tradition. The annual EAA convention was first held in Milwaukee, then Rockford, Illinois, and, beginning in 1970, at Wittman Field in Oshkosh, Wisconsin. From its humble beginnings, our annual EAA Convention has become the world's largest and most significant aviation event of any kind."

From its humble beginnings in the Poberezny's basement in those early years to the international organization it is today, EAA has grown to meet its members' needs. An example of meeting those needs is EAA's comprehensive Internet website, as well as one for its annual fly-in, now known as AirVenture Oshkosh.

In EAA's own words documenting its history online, "There's an element of excitement associated with the word airplane that creates the spirit of adventure. It knows no boundaries and encourages enthusiasm that's as infectious as it is appealing. It is what has captured the imagination of over 170,000 individuals who belong to EAA—The Leader In Recreational Aviation.

"EAA was founded in 1953 by current Chairman of the Board Paul H. Poberezny. It has grown from a handful of aviation enthusiasts to a

Mario Toscano photo

170,000-member international organization representing virtually the entire spectrum of recreational aviation. Its headquarters and EAA AirVenture Museum now occupy a 150,000 square foot, multi-million dollar facility in Oshkosh, Wisconsin.

"On Jan. 26, 1953, 36 aviation enthusiasts met at Milwaukee's Curtiss-Wright Field to discuss forming a club. At that first meeting, a vote established the group's name...Experimental Aircraft Association."

EAA notes how that name came to be chosen. "At the end of his opening speech, 36 candidates became 36 members. They elected officers, discussed a name for the organization, and talked about by-laws. Because the planes we flew were modified or built from scratch, they were required to display an EXPERIMENTAL placard where it could be seen on the door or cockpit, so it was quite natural that we call ourselves the 'Experimental Aircraft Association.' We did not relate it to military experimentation but rather as a synonym for the word *sport*.

"For the first 11 years, Paul and Audrey Poberezny administered the fledgling organization in the basement of their Hales Corners, Wisconsin, home as volunteers. Often, while Paul was absent on military missions, Audrey handled many of the day-to-day operations during those early days."

"The first EAA Fly-In was held in September of 1953, in conjunction with the Milwaukee Air Pageant, which Poberezny had helped organize in 1950. Fewer than 50 airplanes were registered at the inaugural event—a far cry from the 12,000 airplanes the week-long event attracts today at Wittman Regional Airport in Oshkosh.

"The Convention became too big for its Milwaukee home and moved to Rockford Municipal Airport in Rockford, Illinois in 1959. Continued growth prompted EAA to move to its current location in 1970. Now known as EAA AirVenture Oshkosh, the convention is the largest and most significant aviation event in the U.S. The week-long celebration of flight is attended by over 800,000 people, making it the showcase for cutting-edge aircraft from around the world, while remaining the home for its traditional constituencies...homebuilts, warbirds, vintage aircraft, ultralights and general aviation aircraft."

And to paraphrase a famous radio commentator with a media center named for him at EAA Headquarters, now you know the rest of the story.

SPECIAL AIRCRAFT AND THEMES SCHEDULED INCLUDE:

The first EAA AirVenture Oshkosh appearance since 1999 of the U.S. Marine Corps' AV-8B *Harrier II* vertical takeoff and landing "jump jet." The *Harrier* is scheduled to be at AirVenture Oshkosh on July 26-28. It is scheduled to demonstrate its unique

vertical capabilities during the afternoon air show each day it is at Oshkosh. The McDonnell Douglas AV8-B is the latest version of the Marine Corps *Harrier* that is based upon the original *Harrier* developed by the British in the early 1960's.

The Lockheed *Super Constellation* "Star of America" is also scheduled to attend. Based at the Airline History Museum in Kansas City, Missouri, the *Super Connie* will be at Oshkosh throughout the fly-in. It is expected that the public may be able to tour the aircraft for a fee.

Wednesday, July 24: Countdown to Kitty Hawk Day. Included in this special theme will be presentations about the Wright brothers, the status of the construction of an authentic 1903 Wright *Flyer*, plus other activities highlighting the planned 100th commemoration of the Wright brothers' first powered flight at Kitty Hawk in 1903.

Thursday, July 25: Sounds of Speed Day. Highlights air racing.

Friday, July 26: Recreational Aviation Day. Features recreational flying and the new technologies being developed.

Saturday, July 27: Salute to American Airpower Weekend. This day salutes past and present military aviation. This is supposed to be the largest gathering of current military aircraft to ever participate in an AirVenture fly-in.

Sunday, July 28: Wisconsin Day. Recognizes the support provided by the residents of Wisconsin for their 50 years of support for the EAA fly-in.

Monday, July 29: Kids' Day. This day includes special events for kids. Those age 18 and under with parent, guardian, or supervising adult will be admitted free.

For more information on the special events at AirVenture Oshkosh 2002, you can check its website at <www.airventure.org>. For information about EAA, you can check its website at <www.eaa.org>.

NOTAM DATA

For those flying to AirVenture Oshkosh, the *Notice to Airmen* (NOTAM) has been released. The NOTAM outlines the special flight procedures for operating in, through, and out of the airspace surrounding Wisconsin and neighboring areas. The NOTAM is effective July 20-29. The effective date of the NOTAM is before the opening date of the AirVenture Oshkosh fly-in. You can call EAA at 1-800-564-6322 for a free copy of the NOTAM. You can also download a copy of the booklet at <www.faa.gov/NTAP> or <www.airventure.org> or <www.eaa.org>.

The NOTAM states it does not supercede restrictions pertaining to the use of airspace contained in FDC NOTAM's. Please check for current NOTAM's by calling Flight Service at 1-800-WX-Brief. In light of events since September 11th, everyone planning on flying to Oshkosh should check with Flight Service for any airspace changes in your immediate area as well as en route to Oshkosh.

H. Dean Chamberlain photo

The AirVenture NOTAM highlights the following changes for 2002:

- Landing patterns at Oshkosh are renamed Purple, Red, Yellow, and Blue flows.
- The Warbird/High Performance Arrivals are restricted to Warbird aircraft and high performance turbojet and twin turboprop aircraft capable of 150-knot cruise speed. Warbirds that cannot meet the 150-cruise speed are to fly the standard VFR arrival procedure.
- There are new parking area sign codes for Homebuilt and Vintage aircraft areas.
- Aircraft manufactured in 1966 are now allowed in the Vintage (Contemporary class) areas.

If you are flying an aircraft to AirVenture 2002, you need to get a copy of the NOTAM and review it carefully. As we have said in past years, you don't want to be in one of the biggest mixes of different types of aircraft in the world and not know what is expected of you and what you can expect other pilots to do. You need to review the routing and operating procedures in the NOTAM for your specific type of aircraft.

For IFR flights, carefully review the section for filing and how to operate VFR, if Oshkosh is VFR. An IFR slot reservation system will be in effect as outlined in the NOTAM.

All pilots need to review the information about the color runway circles or dots. You have to read the NOTAM to know the difference between the orange dot, the green dot, and the white dot.

Pilots planning on flying over Lake Michigan should review the Lake Reporting Service (LRS) outlined in the NOTAM and the *Aeronautical Information Manual* (AIM). Similar to normal flight plans, the LRS requirements include making radio contact every 10 minutes. If contact is not made after 15 minutes, search and rescue is launched for you. The NOTAM contains complete instructions and how to file a LRS flight plan.

PREFLIGHT PLANNING SUGGESTIONS

The NOTAM's Preflight Planning section reminds everyone planning to land at Oshkosh to plan for an alternate airfield such as Appleton (ATW), Fond du Lac (FLD), or Green Bay (GRB) in case you can't get into Oshkosh. Parking and scheduled transportation are available from these airports. During the period of this NOTAM, a temporary control tower will be operational at Fond du Lac.

If you are inbound to Oshkosh and have to divert to one of the above fields, you have to remember to modify your VFR flight plan accordingly.

Reasons for having to divert could be an accident at Oshkosh or no available aircraft parking, the field is closed for the air show, or the field is closed for the night. If your destination airport is Oshkosh, you need to be prepared to go somewhere else in case you can't get into Oshkosh.

Oshkosh is closed for arriving traffic from 8 p.m. CDT until 7 a.m. CDT from July 20 though the end of the show.

AIRSHOW HOURS AND AIRSPACE

The airport is also closed during the airshow. Times and dates for the airshow are Tuesday, July 23, through Sunday, July 28, from 1500-1830 hours CDT. Monday, July 29, the times are 1400-1700 CDT.

The airshow demonstration area is that airspace within a five (5) NM radius around Wittman Regional Airport from the surface to 12,000 feet MSL.

Normally, 60 minutes after the airshow, inbound aircraft are permitted to land. You need to monitor the ATIS for current information.

AIRCRAFT SIGNS AND PARKING UPDATES

If you are landing at Oshkosh, you need to make a sign for displaying the code for your intended parking or camping area. The light-colored signs with dark letters should be readable from 50 feet away. The parking and camping codes are HBC for Homebuilt Camping; VAC for Vintage Aircraft Camping; GAC for General Aviation Camping; HBP for Homebuilt Parking; VAP for Vintage Aircraft Parking; GAP for General Aviation Parking; WB for Warbird Area; FBO for Basier Flight Service Ramp (with prior permission); and SP for Seaplane Area (amphibian). You will also need a similar sign with either VFR or IFR for your departure.

For the latest parking update, you can check a telephone recording at (920) 230-7820 or the Internet at <www.airventure.org/aircraft/parking_status.asp>. The OSH Arrival ATIS (125.9) will also have current parking information.

VFR PROCEDURES FOR VFR AND IFR TRAFFIC

Since the primary VFR route into Wittman Regional Airport during the effective times of the NOTAM is from Ripon, Wisconsin (Chicago Sectional)

H. Dean Chamberlain photo

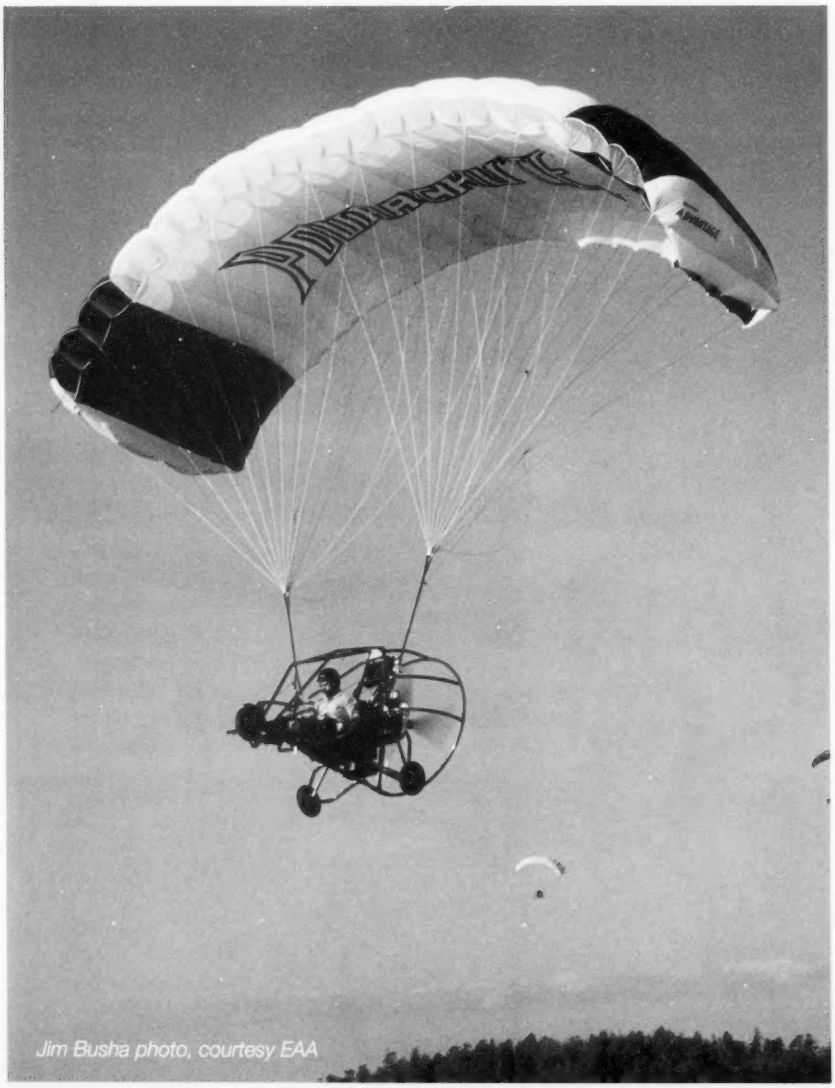
to Fisk then to Oshkosh, every pilot flying into Oshkosh needs to review the routes, altitudes, and any special handling procedures such as hold involved in the procedure. The NOTAM shows recommended routes for VFR traffic that avoids high-density airports en route to Ripon. One shows how to avoid the Green Bay Class C and the Appleton Class D airspaces. Another route shows how to avoid the Madison, Wisconsin, Class C airspace. The third recommended route shows how to avoid the various classes of airspace around Milwaukee. The fourth route shows how to avoid Volk Field and the Volk Class D airspace.

Everyone is reminded that these procedures are subject to last minutes changes.

FLIGHT SERVICE INFORMATION AND HELPFUL HINTS

The NOTAM reminds pilots of the following:

- IFR flight plans can be filed up to 22 hours in advance. There is no time limit for VFR flight plans.
- Flight plans should be filed as far in advance as possible.
- The AFSS telephone number is 1-800-992-7433 (24 hours).
- The Oshkosh Temporary AFSS in the FAA Safety Center is open from 0600-2000 CDT daily for walk-in service.
- Inbound flights should add 30 minutes to their ETE.
- Pilots should not file for multiple stops. Flight plans should be filed for each stop.
- VFR flights should be canceled while approaching destination. Parking delays could exceed 45 minutes.
- ATC does not cancel VFR flight plans. VFR pilots should cancel their flight plans with a Flight Service Station (FSS).
- When contacting FSS, pilots need to provide complete aircraft call sign, general location, and the frequency you are using.
- Due to frequency congestion, air filing of flight plans between 0600-2100 CDT is discouraged.
- Pilots are asked to avoid using Oshkosh (OSH) 122.25 and Fond du Lac (FLD) 122.5 for weather information.
- There will be a North Briefing Annex at the North Forty located across from the registration/tie-downs building. The Annex provides an abbreviated departure briefing without pilots having to enter the paid admissions area. Flight plans can be filed at the Annex. Hours are 0700-1500 CDT daily beginning on July 23.



Jim Busha photo, courtesy EAA

HELP PROTECT YOUR FELLOW PILOTS AND YOURSELF

Pilots are asked to periodically monitor 121.5 MHz en route to and from Oshkosh to check for activated ELT's. If the distinctive sweep tone is heard, pilots should contact the nearest AFSS or ATC facility and report the reception.

Before you shut down your aircraft's radio, you should check 121.5 MHz to see if your ELT is transmitting.

Considering the thousands of aircraft operating to and from the Oshkosh area, there is a chance that someone's ELT will active. It is important that any inadvertent ELT activation be discovered quickly and turned off to prevent its signal from interfering with a real emergency signal.

FAA AVIATION SAFETY CENTER

EAA AirVenture OSHKOSH '2002

FORUM SCHEDULE

2002	8:30 -	10:00 -	11:30 -	1:00 -	2:30 -
TUESDAY, JULY 23	"Collisions - The Rest of the Story" Jimmy Szajkovics, FAA, Aviation Safety Program John Dorcey, Wisconsin DOT	"Mark's Believe It or Not - A View From the Tower" Mark Schreier, FAA, Minneapolis Air Traffic Approach Control	"Causal Factors of Recent Accidents" Scott Landorf, FAA, Aviation Safety Program	"Human Factors and Spatial Disorientation" Rogers Shaw, FAA, Civil Aeromedical Institute	"Complete ATC Seminar" (practical flight operations information from start to finish!) Kris Palcho, FAA, Aviation Safety Program Cleveland, OH Air Traffic Team, FAA, (FSS, TWR, Center)
WEDNESDAY, JULY 24	"Carburetor Ice - How, Why, Where?" Jim Stokes, FAA, Aviation Safety Program	"Proposed Sport Pilot Regulation Update" Sue Gardner, FAA, Sport Pilot Project Manager	"How to Talk to ATC So You Get What You Want" Mark Schreier, FAA, Minneapolis Air Traffic Approach Control	"Single Pilot IFR" John Steuernagle, AOPA Air Safety Foundation	"High Altitude Physiology Training" (Includes all training on aviation physiology that applies to pilots flying above 12,500 feet. A training record endorsement certifying course completion will be provided to each participant.) Rogers Shaw, FAA, Civil Aeromedical Institute
THURSDAY, JULY 25	"GPS/ Satellite Navigation Operational Integration" Dave Peterson, FAA, Navigation Systems Implementation Harry Hodges, GPS TAC	"Why Engines REALLY Quit: The Top 10 Reasons" Bruce Edsten, FAA, Aviation Safety Program	"Spatial Disorientation" John Steuernagle, AOPA Air Safety Foundation	"Solving the Mysteries of Special Use Airspace" Lt. Col. John Allen and Lt. Col. Don Curry, USAF Lt. Col. Tom Jefferson, U.S. Army	"Aviation Weather - Everything I Ever Needed to Know" E. Allan Englehardt, Designated Pilot Examiner
FRIDAY, JULY 26	"Operations Airspace - 2002" John Steuernagle, AOPA Air Safety Foundation	"Flying Left Seat - Passing Your Next Medical" Jon L. Jordan, MD, FAA, Federal Air Surgeon	"Meet the Administrator" FAA Administrator and staff	"GPS FAQs - Using your GPS in the REAL Flying World" Mark Grady, The Aviation Speakers Bureau	"How Much is Too Much? - Don't Be Fuelish" E. Allan Englehardt, Designated Pilot Examiner
SATURDAY, JULY 27	"A Personal Matter - Analysis of GA Fatal Accidents" Brian Poole, FAA, Office of Accident Investigation	"Defensive Flying" Rod Machado, AOPA and The Aviation Speakers Bureau	"GPS for VFR Operations" John Steuernagle, AOPA Air Safety Foundation	"How to Avoid Unwanted Adventure" John and Martha King, King Schools	"Review of FAR Part 61 - Changes and Updates" E. Allan Englehardt, Designated Pilot Examiner
SUNDAY, JULY 28	"Safe Flight 21: Alaska Capstone Program" John Hallinan, FAA, Capstone Program Manager	"Why Did I Do That? - How Your Real Life Affects Your Real Flying" Mark Grady, The Aviation Speakers Bureau	"Got Attitude? A Look at Hazardous Attitudes in Aviation" Marlan Perhus, FAA, Aviation Safety Program	"When Things Go Wrong" John and Martha King, King Schools	"The Basics of Maintenance in General Aviation" Richard Mileham, FAA, Aviation Safety Program
MONDAY, JULY 29	"Collisions - The Rest of the Story" Jimmy Szajkovics, FAA, Aviation Safety Program John Dorcey, Wisconsin DOT	"Causal Factors of Recent Accidents" Scott Landorf, FAA, Aviation Safety Program	"VFR Airspace Operations and Equipment Requirements" E. Allan Englehardt, Designated Pilot Examiner		

FAA forums are held in the FAA Aviation Safety Center, located just north of and next to EAA Wearhouse.

SCHEDULE OF EVENTS

ON-SITE SURVIVAL

The following information is from the EAA AirVenture website. The information tells how one can prepare to survive attending AirVenture and enjoy the experience.

For those who love aviation, Oshkosh is the place to be from July 23 - 29. Like a pilgrimage, hundreds of thousands of enthusiasts will descend upon Wittman Field and the EAA AirVenture grounds to saturate themselves in their passion for flight. Take it from AirVenture veterans, though; you should adopt the Boy Scout motto and "Be Prepared" so you can maximize your enjoyment of this annual event.

This article provides some fast and easy tips that have proven their worth over the years for AirVenture attendees. For your convenience, we've condensed them into a top 10 list for a more pleasant AirVenture experience.

Apply sunscreen: One thing is for sure: Sunscreen works. Make sure you cover exposed areas of your body with at least an SPF 15. If you bring children, don't forget to cover them as well.

Bring a pair of comfortable shoes. Take good care of your feet. Wear the most comfortable walking shoes you have. Just truckin' around the grounds can add up to several miles over the course of one day.

Wear a hat. Temperatures can range anywhere from the 60's to the 90's, but AirVenture always seems to have a stretch of very hot, humid weather. On such days, a hat can provide some protection from overheating. If, for some reason, you forget to bring one, there will be plenty of official AirVenture 2002 hats available. (If you're watching the air show from the flight line, the back of your neck will likely be fully exposed to the afternoon sun. A bandana tucked under the back of your cap can provide an effective sun block.)

Use lip balm. Not many people think of this, but bring some Chapstick™, Blistex™, or other brand and apply often to prevent the sun from turning your lips into leather.

Wear sunglasses. A fairly obvious item on your checklist, one for which your eyes will thank you. A neck strap also comes in handy.

Check the forecast. If there's a chance of rain during the day, be prepared with a light jacket or poncho, a small umbrella, and an extra pair of socks.

Drink lots of water/bring a water bottle. Dehydration can be a problem for even the heartiest AirVenture attendees, especially on those oppressively hot afternoons. Nothing prevents dehydration as well as water, and bottled water is available at the many concession areas. You can make plenty of use of the many water fountains located throughout the grounds. Don't rely on soda pop to prevent dehydration. (Alcohol actually hastens the process.)

Organize your visit. Take advantage of all the information available before you get here. Since you're reading this, you're at the right place,<www.AirVenture.org>. For example, if you plan to attend some of the hundreds of forums, check out our forums schedule page that allows you to view the forum schedule by date, interest, keyword or presenter.

Bring a camera and lots of film. Be sure to check your battery, and it's not a bad idea to have extras just to be safe. A good rule of thumb is to bring two more rolls of film than you plan to shoot. If you bring a video camera, make sure you have an extra tape and at least one fully charged spare battery.

A few don'ts:

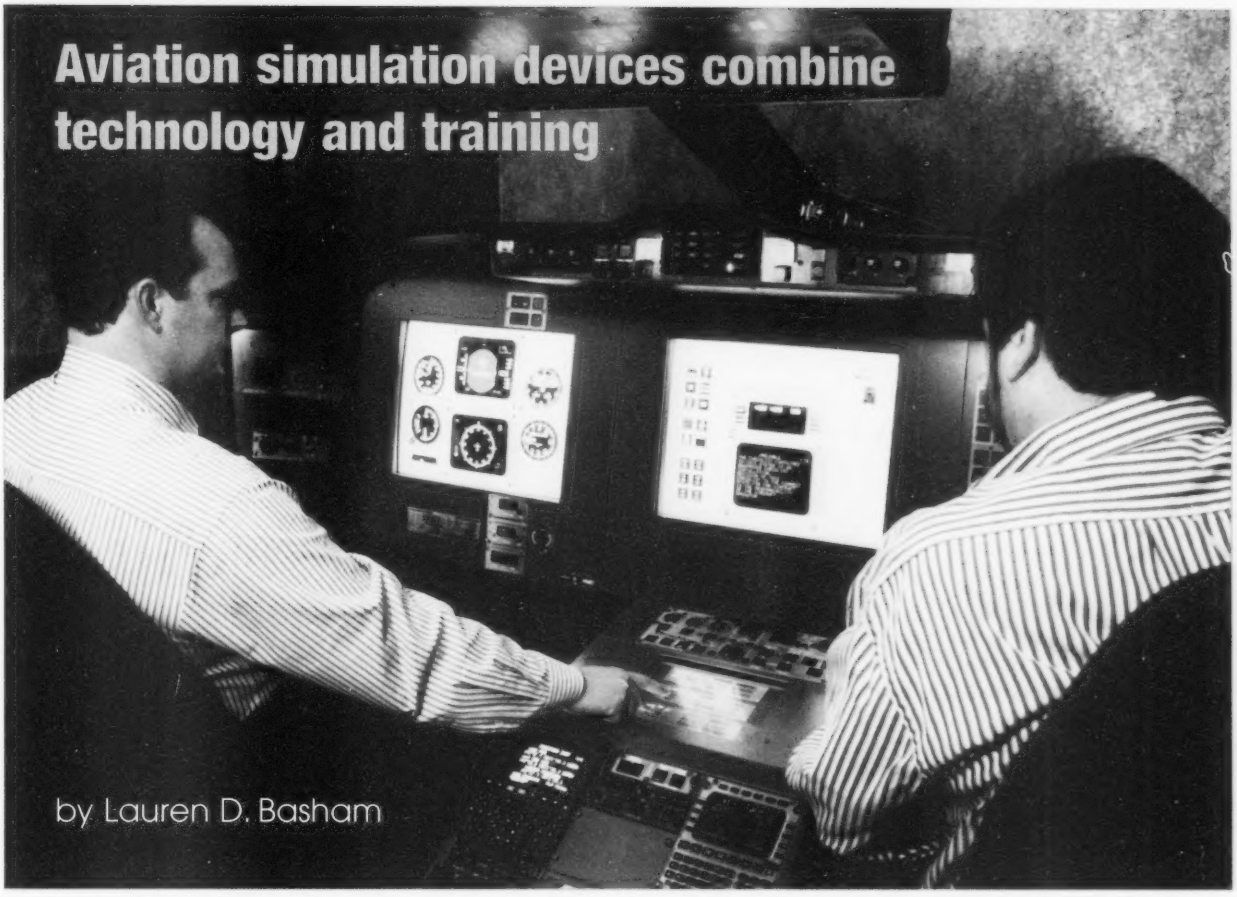
When you're near aircraft, the rule is: "Always ask before touching." For safety's sake, eating and smoking are not allowed in the flight line or near airplanes. In fact, if you've been thinking about quitting smoking, this would be a good time to do it.

Although many have tried, it is literally impossible to see everything in one day, much less a week. Pace yourself, and focus on what really interests you.

Please remember that rules and regulations exist to ensure everyone's safety and enjoyment. If you have any questions, just ask a volunteer, without whom AirVenture would not be possible.

Finally, we hope you enjoy your visit to AirVenture Oshkosh 2002. By heeding these few bits of advice, you'll be well on your way.

Aviation simulation devices combine technology and training



SimuFlite Training International photo

by Lauren D. Basham

In the 1920's Edwin A. Link, the son of a piano maker, was determined to learn to fly but lacked the funds needed to pay for the airborne hours required, so he built his first Link Trainer in his father's basement. Since then, literally millions of pilots have been trained in a wide variety of simulation devices.

While the dictionary defines "simulator" as a device that enables the operator to reproduce, or represent under test conditions, phenomena likely to occur in actual performance, the FAA uses more precise definitions. In the public's view, virtually every device, no matter how simple, is a "flight simulator," and this term is used indiscriminately with seemingly little awareness of the true nature of the individual devices and their authorized uses.

The FAA differentiates among the three most frequently used simulation devices—the flight simulator, the flight training device (FTD), and the personal computer-based aviation training device (PCATD). Each has very different capabilities and approved uses.

Historically, a generation of ground-training devices followed the Link Trainer. They were designed to duplicate the flight characteristics of a generic aircraft and increased in popularity for use in flight training toward the basic pilot certificates and ratings. The cockpit procedures trainer was next, usually mocked up as a specific aircraft type in which instruments, switches, and controls were available to effectively teach cockpit procedures and aircraft systems familiarity.

Nowadays the devices can be considerably more sophisticated. Over the past several decades, the FAA has actively promoted the use of flight simulation by adopting extensive provisions to encourage the use of advancing flight simulation technology for virtually all phases of pilot training and certification.

In 1980, the FAA published an Advanced Simulation Plan, which made the concept of total simulation an operational reality. This plan, contained in Federal Aviation Regulation (FAR) Part 121, described three major sets of criteria for flight simulators that could be used for different levels of training. This criteria encompassed five types of simulators—specifically non-visual, visual, Phases I, Phase II, and Phase III—each of which described a level of simulator fidelity that was progressively more demanding, a model of certification that is still used today.

Under the FAR's, a flight simulator

"is a full-size aircraft cockpit replica of a specific type of aircraft, or make, model, and series of aircraft, includes the hardware and software necessary to represent the aircraft in ground operations and flight operations, uses a force cueing system that provides cues at least equivalent to those cues provided by a three-degree freedom of motion system, uses a visual system that provides at least a 45-degree horizontal field of view and a 30-degree vertical field of view simultaneously for each pilot, and has been evaluated, qualified, and approved by the Administrator."

The fidelity standards and approval criteria are contained in Advisory Circular (AC) 120-40, "Airplane Simulator and Visual System Evaluation." Under this AC, a given simulator of any of the five types must represent a specific airplane type and have a motion system. Simulators are designated as Levels A, B, C, and D, and they are used extensively for both general aviation and air carrier training and checking in accordance with provisions stated throughout Parts 61, 121, 135, 141, and 142. Virtually the entire training and certification process can occur in a properly approved simulator.

Training Devices

AC 120-40 classified devices without motion systems as training devices, and their approval criteria were then contained in an FAA order. These devices, along with nonvisual simulators, offer less fidelity and are given less training and checking credit.

Under the FAR's, a flight training device "is a full size replica of the instruments, equipment, panels, and controls of an aircraft, or set of aircraft, in an open flight deck area, or in an enclosed cockpit, including the hardware and software for the systems installed, that is necessary to simulate the aircraft in ground and flight operations."

The approval process for FTD's is contained in AC 120-45A, "Airplane Flight Training Device Qualification." Level 1, while originally reserved, now includes ground training devices (GTD) that were incapable of being "level" qualified under the AC and that were given a temporary "conferred status." Under FAR 61.4(b), Level 1 FTD's may continue to be used as previously authorized until the FAA determines otherwise.

Training hour credit is granted for the use of the remaining six FTD levels, based on the maneuvers and procedures or events that were authorized in the training device when used under an approved training program. The FAA issues a letter of authorization (LOA) for these devices that outlines those specific maneuvers, procedures, or crewmember functions. In general, flight training devices are widely used. Both general aviation and air carrier training and checking is completed in accordance with provisions stated throughout FAR Parts 61, 121, 135, 141, and 142.

Computer Training

Computer-based simulation packages, which ultimately led to the development of the personal computer-based aviation training device (PCATD), began their appearance in aviation almost 20 years ago. In 1991, the FAA realized that technological developments in this class of simulation devices would eventually mandate that a way be found to authorize their use in at least a limited fashion in general aviation training. The result was AC 61-126, "Qualification and Approval of Personal Computer-Based Aviation Training Devices."

Under AC 61-126, a PCATD is a device that meets or exceeds the criteria shown in Appendix 1 of the AC for its qualification and approval, functionally provides a platform for at least the procedural aspects of flight relating to an instrument rating curriculum, and has been qualified by the FAA.

PCATD's are used solely as authorized under FAR 61.4(c): The device must have been qualified and approved by FAA; it must be used in connection with an integrated ground and flight instrument training syllabus that is approved under Part 141 if used under Part 141, or meet the scope and content for approval under Part 141 if used under FAR Part 61; and it is limited to not more than 10 hours of instruction, which must be given by a flight instructor with an instrument instructor rating, and the instruction given must consist of the procedural tasks listed in the Appendix of AC 61-126.

An integrated ground and flight instrument training curriculum is one that follows knowledge-based skills with motor skills for each flight task. It builds upon specific knowledge acquired by following with procedural rehearsal in a PCATD and motor skill rehearsal in a flight training device, a flight simulator, or in an airplane. Currently, five manufacturers' PCATD's representing various single- and multi-engine airplane models have been qualified and approved by FAA: Jeppesen, Aviation Teachware Technologies, Precision Flight Controls, ASA, and Fidelity Flight Simulation Inc.

Innovative simulation technology is experiencing phenomenal growth. The devices continue to grow into more sophisticated tools for flight instruction. From the high-end, full motion Level D flight simulator used in an aircraft training center to the PCATD used by an independent instrument instructor, simulation devices ensure an effective transfer of learning and maximum safety. Properly used, they guarantee each successive generation of pilots is better trained than the last.

This article was reprinted with permission from the October 2001 NAFI Mentor.

Lauren Basham is an Aviation Safety Inspector in the FAA's General Aviation and Commercial Division's Certification Branch, AFS-840, responsible for regulatory and policy guidance for ground and flight training devices, personal computer-based aviation training devices, and evaluation and approval of new and emerging simulation technology for use by general aviation.

It Was a Dark and Stormy Night...

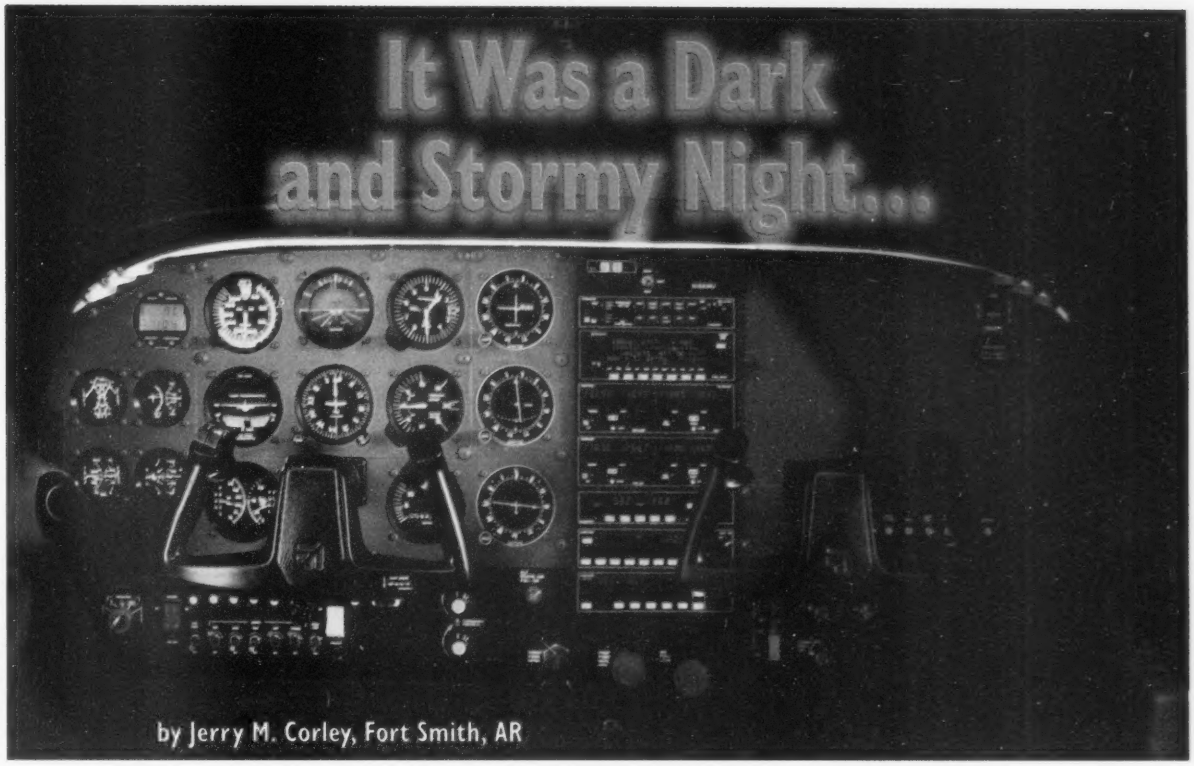


Photo courtesy of Cessna

by Jerry M. Corley, Fort Smith, AR

The following article was sent to the magazine via the Internet and we would like to share the lessons learned with you. Also, it's always nice to hear when an FAA employee gets a pat on the back for a job well done.

October 13, 2001. A day I will never forget. Earlier in the day I decided that I would take my wife to the casinos at Shreveport (LA) as a birthday present. We planned to fly down, spend the night, do our part to help the local economy, and fly back on Sunday. Little did I know our entire electrical system would "crap out" in hard IMC.

As a former law enforcement officer, I've had a few scary incidents in my time, but that Saturday night beat them all. Just before contacting Fort Worth Center, I had the opportunity to handle a relay for Memphis Center to another pilot they were having trouble communicating with. It's funny how ironic twists come into sight after the fact. Little would I know that a short time later, the same relay system would help save our lives.

I believe we were approximately 40+ miles north of Texarkana (TXK) when our transmissions began breaking up just before entering a layer of clouds and rain at 7,000 feet. Upon entering the clouds, we began receiving heavy rain and a very short time later I noticed a blinking of our comm/nav radios and then EVERYTHING went dead. Communications, navigation, turn coordinator, some engine instrumentation (oil pressure, temp, fuel gauges) interior and exterior lights. I had a VFR GPS on board and had it set up for TXK to supplement my in-flight information in the way of ground speed and orientation to my route of flight and it was still active for another two minutes or so. All I had left to fly on were my airspeed, altimeter, vertical speed indicator (VSI), and my vacuum driven gyros. That was the worst feeling I've ever experienced. I instantly received a burst of adrenaline, the first of many to come.

It began to get quite dark in the clouds with all of the rain and I had no interior lighting. I yelled at my wife, as it was very noisy in the cockpit with the rain and engine noise, to grab my hand held Sporty's transceiver and my flashlight. The loss of so many instruments was a lot to swallow in the space of a few seconds. I began modifying my scan to see what instruments were operative, I noticed I was at 7,300 feet and 20 degrees left of where I had been only a few seconds earlier. I began correcting back to altitude by pulling some power and was only descending at approximately 100 feet per minute. Then suddenly the VSI pegged at 1,000 feet per minute descent, yet the altimeter was only moving downward slightly.

Let's just say that the tension factor, with conflicting information, was pretty high. I immediately activated alternate static air for the static instruments to completely rule out problems with the static system, applied carburetor heat, and focused on the two most important things in instrument flying—heading and altitude. The instruments began to settle down as I kept aircraft control. I knew approximately a 170 heading was getting me toward TXK so I picked it back up and was continually trying to transmit an emergency over the backup radio. I

had my wife shining the flashlight at various instruments and various times so that I could see them, and I was just a hair from task saturation. With the little rubber ducky antenna, of course, it was almost impossible to communicate with Fort Worth Center. I'm just so thankful for the other pilots who relayed for me and hope there is some way that I can communicate my thanks to them as well.

I then lost the GPS. Its last data indicated that I was between 36-38 miles north of TXK. At that point, I heard center clear me down to 2,500 feet. In the process of that descent, at (I'm guessing now as a great many things have now become blurred because of the massive adrenaline rush and exhaustion that later followed) approximately 4,500 feet, I came into a small cylindrical VFR hole and could see a few farm lights. The hole was very small and I could tell that the ceiling was low. I elected to remain at 3,000 feet and maintain the VFR while circling in the now CLOSING HOLE. There was nothing offered by the hole. My thoughts were that if the ceiling was high enough, I would orient myself and fly to TXK and land. As I was evaluating my options, I knew that I had taken off from Fort Smith with at least 4:30 hours of fuel on board and if needed could fly west until reaching VFR weather, as my preflight briefing indicated that our route of flight would be in the trailing area of IFR moving eastward. I remembered the old saying, "No one has ever collided with the sky." I had airspeed and altitude and knew that I had time to think as long as I followed the other motto. "Keep it under control and don't hit anything."

What I didn't like, was the fact that center had no radar on me and had no idea what I was thinking. I wish that I could have flown direct to TXK, but having no navigation equipment, I would have no way of knowing when I arrived or passed TXK and would certainly have no means of shooting an approach as they were reporting IFR conditions. Then center set up the relay first with a *Bonanza* pilot who was already westbound and then a military *King Air*, EZ-07. It was so reassuring to know there was one person in the air—"with me"—that we could communicate through. With the arrival of EZ-07 and the coordinated plan to fly westward for VFR, I knew the "accident chain" was reversing course. When I was on a 195 degree heading for possible VFR conditions, there was a brief period of "almost" VFR, but the ceiling was extremely low over a few farm lights and it too closed in. When I found out that the weather was good at Paris, TX (PRX), it was a welcome relief.

Once again, with the coordination that ATC Specialist Thomas Herd set up, I knew things were looking good and working together, we could get through it. True to his word, a short time later, but what seemed like forever, we popped out of the weather. I could see EZ-07 off to my 11 o'clock at 10 miles and PRX on the horizon. I'd also like to thank him for taking the time to look up the airport info, briefing me on it, and providing the option of the Clarksville airport. After evaluation of my aircraft status, I just didn't feel good about landing on a 50 X 3,000 feet runway as opposed to Paris' 150 X 6,000 feet runway.

I had no interior or exterior landing light and on top of that my flaps, which allows a steeper and slower than normal approach, were electrically driven and out of service. Thus, I knew we would require a faster and shallower landing and it would be more difficult to land on centerline. Therefore, it was only logical to continue on for Paris. The arrival was uneventful, I believe due to the high emphasis placed on making night landings without the use of landing lights and interior lights in my primary training many years ago. The next day I consulted with a local mechanic, and he stated that the alternator was totally shot and he speculated on the possibility of a lightning strike from the rear that we couldn't see or perhaps a massive static build up since the aircraft was not equipped with static wick dissipaters.

I did not find any evidence of a lightening strike. However, I can assure you that I'll see to it that the FBO installs the dissipaters on their rental aircraft as well as an aircraft mounted standard plug in for hand-held radios, which in effect will make the whole aircraft an antenna. I can also tell you my wife and I have a new found interest in hand-held GPS receivers, as well, to supplement the back up radio.

We have procedures in place for comm radios out and navigation out, but when you loose them both the old saying goes that "all bets are off"—especially in IMC. I just thank goodness Mr. Herd and the pilots in the air the night of October 13, 2001, didn't give up on us. On behalf of my wife and myself, I would like to extend the most profound "thank you" I can give to ATC Specialist Thomas Herd of the Fort Worth ARTCC. His actions, professionalism and assistance were instrumental (pardon the pun) in a safe conclusion of an extremely dangerous situation. I also appreciate the way in which he coordinated the communications relay between me and the *Bonanza* pilot and then the crew of EZ-07. Because of the professionalism and dedication of all involved, we had a safe landing and shall forever be grateful. Our children thank them too!

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Note from the Fort Worth ARTCC:

I remember this night like it was yesterday. I do not believe this situation could have been any worse nor the tension in the control room any heavier. There were seven controllers within the area at the time, plus the Operations Supervisor and the Operations Manager. Everyone was focused on getting this pilot down safely.

Thomas Herd did an outstanding job that night in assisting this pilot. He was calm and professional, thus having a calming effect on the pilot. Mr. Herd and his supporting cast, I believe, saved the life of this pilot and his wife.

Stephen Burks
Quitman Operations Manager

IA Renewal: Cajun Style

story and photos by H. Dean Chamberlain

FAA Inspector Bill O'Brien tells maintenance technicians how they can receive college credits based upon the date of their Airframe and Powerplant certificates.

The 26th annual Gulf South Aviation Maintenance Seminar was held March 28 and 29 in Lafayette, Louisiana. Held in the heart of Cajun country, I think the seminar is one of the best-kept secrets in the country. I don't think there is another IA renewal seminar that offers the training, the peer networking, the chance to meet manufacturers and suppliers, and the opportunity to enjoy Cajun hospitality at the cost charged for this seminar.

Coordinated by Harold Summers of Petroleum Helicopters, Inc. and supported by a dedicated staff of volunteers, industry sponsors, Gulf coast aviation operators, and the Baton Rouge Flight Standards District Office, everyone works together to make this annual seminar the success it is. According to Summers, the Louisiana Department of Aviation initially sponsored the seminar. He said industry assumed responsibility for the seminar in about its fourth year. Now after 26 years, I think it's safe to call it a success.

The seminar provides FAA certificated Airframe and Powerplant (A&P) mechanics with Inspection Authorization (IA) the opportunity to meet their annual renewal training requirements by attending at least eight hours of the various training courses presented during the two-day seminar. FAA Aviation Safety Inspectors and support staff from the Baton Rouge Flight Standards District Office (FSDO) were present to process the paperwork for each IA applicant who met the training requirement. Each IA had to have documented proof of at least eight hours of training before FAA would process his or her renewal.

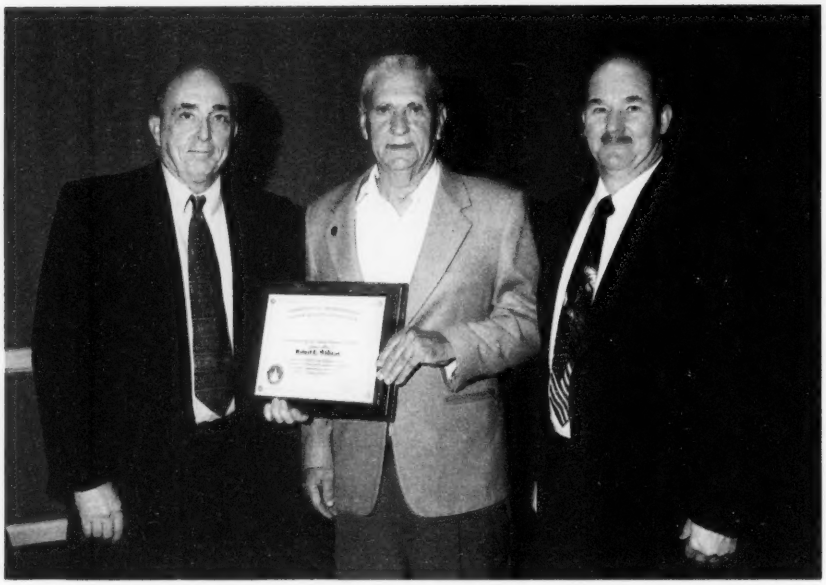
Although held in the heart of "helicopter country," the Gulf coast, the seminar is designed to support the needs of both fixed-wing and rotary-wing IA's and A&P's. The training included such topics as propeller repair and overhaul, maintenance practices for the Pratt & Whitney PT6A engine, and classes about Bell, Sikorsky, and Eurocopter helicopters. A favorite speaker was the FAA's own Bill O'Brien, National Resource Specialist-Sports Aviation-Airworthiness, who discussed FAA regulations, professionalism, and the awarding of college credit for A&P training received after August of 1989.

IA's from as far away as Florida attended the seminar to renew their IA certificates as well as had the opportunity to meet and talk with industry experts on both fixed-wing and rotary-wing aircraft. I think it is safe to say the Gulf coast, from Florida to south Texas, has one of the greatest densities of helicopters outside of the military as any area on earth.

The seminar was not all training. A highlight of the two-day seminar was the casual "Cajun Feast" awards dinner served banquet style on Thursday night. Featuring typical Cajun style entrees, blackened catfish, red beans and sausage, and seafood fettuccine with steamed white rice, stir fry vegetables, corn maque choux, dessert, salad, and beverages, the meal was a prelude for a Cajun humorous who entertained the audience with his "Uncle Noon" Cajun stories and jokes. The program described his background by stating "Johnny Hoffmann's heritage dates back to the original German-French settlers of southeast Louisiana, making him a 'bony-fried, full bleed Cajun.'" Hoffmann, a retired civil engineer and award winning Cajun humorist, was sponsored by one of the companies at the seminar.

An important part of the dinner ceremonies was the presentation of FAA special and annual awards by the Baton Rouge FSDO's Airworthiness Safety Program Manager Brian Capone. Capone is an airworthiness aviation safety inspector. The FSDO serves the entire state of Louisiana.

First, Capone recognized two Airworthiness Aviation Safety Counselors, Earl McCarthy and Robert Davis, for volunteering their time and talents to support the FAA's airworthiness safety program in Louisiana. Counselors typically present safety seminars, counsel individuals, assist in remedial training, make safety recommendations, and work in their local



FAA Safety Inspectors Bill O'Brien (left) and Brian Capone (right) flank Robert E. Williams who received a Charles Taylor Master Mechanic Award and the Baton Rouge Flight Standards District Office's Wright Brothers' Golden Eagle Award at the 26th annual Gulf South Aviation Maintenance Seminar.

areas promoting safety awards programs and individual participation in such programs.

Then Capone presented the Baton Rouge FSDO's 2001 Maintenance Technician of the Year Award to Nick Shultz. Capone noted in the award presentation that, "Nick Shultz is the epitome of what this award was designed for. This gentleman has continued to work independently for the small, grass roots, general aviation sector. He is one of a dying breed. His total focus is to ensure safe aircraft, legal aircraft, and affordable maintenance, mostly at the expense of his time."

Finally, Capone announced the names of three men awarded the FAA's Charles Taylor Master Mechanic Award. The award is presented to individuals with at least 50 years in aviation maintenance as a mechanic or repairman. Thirty of those years must have been as a FAA certificated A&P or repairman. The remaining 20 years may have been working as an aviation mechanic in the military or industry. Awardees cannot have had their certificate revoked by the FAA. The Award is named for the "first aircraft" mechanic who built the engine used on the Wright brother's first aircraft. Charles Taylor hand-built the engine used on that first powered flight at Kitty Hawk, North Carolina almost 99 years ago on that cold December morning in 1903.

On behalf of the Baton Rouge FSDO and the FAA, Capone presented the Charles Taylor Master Mechanic Award to Frederick "Matt" Matthias, Robert E. Williams, and Oscar Figueroa. Each of the new Charles Taylor Master Mechanics' name, city, state, and certificate number will be added to the Role of Honor book kept at FAA Headquarters in Washington DC.

Capone also recognized Frank Wichman, who received a Charles Taylor Master Mechanic Award in January 2002 in Sidell, Louisiana, and presented certificates and pins to the new "Master Mechanics" wives in recognition of their many years of supporting their husbands' aviation careers.

In addition to receiving a Charles Taylor Master Mechanic Award, Robert E. Williams received the FSDO's Wright Brothers Golden Eagle Award in recognition of his 50 years of being a pilot.

Capone completed his award presentations by recognizing the companies who support initial and recurrent maintenance training of their eligible maintenance employees by participating in the FAA's Aviation Maintenance Technician (AMT) Award Program. The AMT Awards Program recognizes the time, effort, and money companies expend in supporting the training of their employees.

The AMT Awards Program recognizes companies who have five-percent employee participation by awarding them a Bronze Certificate of Excellence. Companies receive a Silver Certificate for 10 percent participation, a Gold Certificate for 15 percent, a Ruby Certificate for 20 percent, and a Diamond Certificate for 25 percent employee participation. Companies with 100 percent of its eligible employees participating in the program receive special recognition from FAA Headquarters.

ERA Aviation, Inc. and Petroleum Helicopters, Inc. received Diamond Certificates.

Bill O'Brien presented special FAA Headquarters Diamond Certificates for 100 percent program participation to Chevron USA, Inc. and Air Logistics, LLC. This was the second 100 percent award earned by Air Logistics, LLC.

The IA training seminar, dinner, and awards presentation are great examples of how industry and FAA can work together to recognize both individuals and companies who have dedicated years of hard work and effort to help make aviation what it is today. Without the support of dedicated individuals such as these new Charles Taylor awardees and the listed aviation companies willing to make the effort through time and money to keep training their employees, aviation would not be as safe and such a significant part of our lives as it is today. These aviation professionals and companies are to be congratulated for their roles in aviation.

The 27th Gulf South Aviation Maintenance Seminar is scheduled for March 13 and 14, 2003. For more information about the 2003 seminar, you can contact Baton Rouge FSDO at (225) 932-5900.

RUNWAY SAFETY CORNER

Crossing the Line

Anyone can be guilty of a runway incursion

by J.C. Boylls

There's a class of aircraft incidents that most of us probably don't think about too much because avoiding them seems so obvious: runway incursions.

The FAA defines a runway incursion as "any occurrence at an airport including an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in a loss of separation with an aircraft taking off, intending to take off, landing, or intending to land."

At a towered airport, for example, who in the world would get onto an active runway without a clearance? How could he or she do it? And more to the point, why would he or she do it? We all know the regulations, and besides, the ground controller will watch out for us, even if we do make a mistake, right?

I like to think that I, as supreme-high aviator, am more skillful, more knowledgeable, more safety conscious, and certainly more careful than the average weekend warrior. Whether I really am is another story. This malady, perhaps better know as complacency, is common with people who've been pilot examiners, written articles in national publications, run flight-training establishments, and gained a lot of experience, some authority, and perhaps a place from which they make their views or opinions know. We fall into a trap and begin to think we're immune to mere human frailties.

It seems, though, that no sooner do I start thinking about myself in this way, or believing my own press (so to speak), then something happens to take me down a notch or two and return me to the real world.

On a trip not long ago, I stopped for fuel at an airport where I'd been before, but not recently. This airport was in the throes of change (read: there was a lot of construction going on), with closed runways and taxiways. A Class C airport, it had two intersecting runways in use. The construction required roundabout taxi routes, but they were not so complex that someone with my extensive experience and obvious skill shouldn't have been able to handle them. The landing and taxi in was uneventful, dodging around construction equipment and areas that had been torn up.

Upon leaving, however, my brain just seemed to stop working, even though I had studied the airport diagram. The taxi directions included crossing one of the active runways (with a "hold short" provision) and a rather long circuitous routing to the run-up area. In the process of trying to relate my taxi route to what the airport diagram showed, I managed to let my airplane roll past the hold line of the active runway. A landing aircraft had to go around after I managed to get the first third of my Cessna 180 past the runway edge and onto the runway itself.

So why didn't I get progressive taxi instructions? Well, there were three reasons. First, for someone with my extensive aviation experience and obvious skill, why should I show my ignorance? I mean, that's decidely uncool. Second, I'd been at the airport before and was familiar with it, or so I thought, even though it wasn't under construction "before." Third, at my departure time, the tower local controller and ground controller were the same person, and he was busy with other traffic, both on the ground and in the air. Remember my extensive skill and experience? I just didn't want to interrupt him.

As everyone probably knows by this time, almost any occurrence has a chain of events leading up to it. When discussing mishaps, this series of events is called an "accident chain." If any link were broken, the mishap probably would not have happened.

A runway incursion, just like any other incident, has a number of events leading up to it, and the incursion itself can be a link in an accident chain. There are four parts to preventing an incursion:

1. Clearances
2. Communications
3. Ground navigation
4. Situational awareness, including scanning

If any one of these parts fails, the probability of an incursion increases. If more than one failure occurs, then an incursion becomes a virtual certainty.

Why is each of these components critical? For those of us who fly from busy airports that have a mix of light general aviation, corporate, airline, and sometimes military aircraft, just think about what can happen when the system breaks down. The unpleasantness that collided at Quincy, Illinois, a couple of years ago is a good example (and it's not even a terribly busy airport), and many of us can still recall the airliner landing on top of a commuter turboprop at Los Angeles International.

These are only two catastrophic examples of what can happen when

RUNWAY SAFETY CORNER

any one part fails. As we all know, we are human and make mistakes. It takes effort on everyone's part to prevent these and other human factors-related accidents.

So let's look at each of these parts briefly. First, clearances: Pilots must understand what they have been instructed to do. If they don't understand , or can't comply, then it's necessary to get a clarification or an amended clearance.

Second, communications: Use the proper procedures, standard words and phases, and read back your clearance, particularly if it is complex or if you aren't familiar with the airport. Request progressive taxi instructions if you need to. (It's okay—really it is.)

Third, ground navigation: Understand the airport layout before starting your engine; use that airport map on the back of your instrument approach chart or in your airport directory. Know and understand the meanings of the airport signage, especially now that the signage has been standardized. The *Aeronautical Information Manual* now comes with color pictures showing these new signs, so they're easy to learn and much more intuitive than before.

Fourth, situational awareness, including scanning: Brief and use passengers to help you monitor your progress across the airport. Monitor your own progress, too. If you, or your passenger, have a question about what is happening, resolve it before proceeding. Use all of your resources, including ATC, to help. Scan for other traffic, including arriving or departing aircraft and helicopters, and watch for pedestrians or vehicles that might not be where they should be. Avoiding runway incursions is a team effort between controllers, who are responsible for coordinating traffic; pilots, who are responsible for aircraft safety; and ground personnel in airport operations or ground services.

I failed in at least three of these areas.

Oh, by the way, what happened to me? Did the FAA violate me? Are pilot examiners with extensive experience and obvious skill immune to prosecution? This one definitely is not. Did I receive, via certified mail, a letter of investigation? Yes. Was I found guilty? I sure was. What did I receive? A letter of warning that was in my airman file for two years. [Editor's Note: The letter of warning (LOW) is the least level of administrative action that the FAA can take. After two years, the LOW is expunged from the pilot's file and no record is kept.] Did I file a timely NASA Aviation Safety Reporting System report? You bet! Will I be even more careful in the future?

What do you think?

J.C. Boylls is a NAFI Master CFI. This article is reprinted with permission from the NAFI Mentor.

CALENDAR OF EVENTS

September 8-15, 39th Annual National Championship Air Races, Reno, NV

Races will be held on September 12 to 15, with qualifying dates of September 8 to 11. For more information call (775) 972-6663 or see the web site at <www.airrace.org>.

October 5-6, Fina-CAF AIRSHOW 2002, Midland, TX

The event will be held at the Commemorative (formerly Confederate) Air Force's (CAF) Headquarters at Midland International Airport. It will feature the CAF's World War II Airpower Demonstration and world renowned "Tora! Tora! Tora!" plus over 100 warbirds on display. Admission charged. For more information, contact Tina Corbett at (915) 563-1000 or visit <www.airsho.org>.

October 10-13, 30th Annual Copperstate Regional EAA Fly-In, Phoenix, AZ

The event will be held at the Phoenix Regional Grande Valley Airport (A39). For more information, contact Bob Hasson at (520) 400-8887 or visit the web site at <www.copperstate.org>.

November 3-7, ATCA 47th Annual International Technical Program and Exhibits, Washington, DC

The Air Traffic Control Association, Inc. (ATCA), event will be held at the Marriott Wardmann Park Hotel. For more information, contact Carol Newmaster at (703) 522-5717 or e-mail at <carol.newmaster@atca.org>.

Transportation Security Regulations

by Rebecca Tuttle

The September 11, 2001, terrorist attacks involving four U.S. commercial aircraft that resulted in the tragic loss of human life at the World Trade Center, the Pentagon, and southwest Pennsylvania demonstrate the need for increased air transportation security measures. The Al-Qaeda organization, which was responsible for the attacks, possesses a near global network. The leaders of the groups constituting this organization have publicly stated that they will attack the United States, its institutions, and its individual citizens. They retain a capability and willingness to conduct airline bombings, hijackings, and suicide bombings against U.S. targets.

The September 11th attacks led Congress to enact the Aviation and Transportation Security Act (ATSA). Under ATSA the responsibility for inspecting persons and property was to be transferred to the Under Secretary of Transportation for Security, who heads a new agency created by that statute, the Transportation Security Administration (TSA).

On February 17, 2002, TSA assumed the responsibility for inspecting persons and property, this responsibility was previously held by aircraft operators. Five days later, on February 22, the Under Secretary of Transportation for Security issued rulemaking transferring the Federal Aviation Administration rules to title 49 of the Code of Federal Regulations. On that day, the Transportation Security Regulations (TSR) were created.

The February 22nd rulemaking also established the basic organization of the TSR's. When looking at this, it is important to keep in mind that the TSA is an inter-modal organization, that is to say that it is responsible for the protection of United States interests and citizens regardless of the mode of public transportation used.

The TSR's appear in title 49, Code of Federal Regulations (CFR), Chapter XII, which includes parts 1500 through 1699. This is broken out into subchapters. Subchapter A contains administrative and procedural rules. Subchapter B contains rules that apply to many modes of transportation. Rules for civil aviation security are contained in Subchapter C.

Subchapter A, 49 CFR 1500 outlines to whom this rule applies and defines the terms used in the TSR's.

Part 1520 addresses the protection of sensitive security information, information that was found in 14 CFR part 191 prior to the transition. This part outlines the type of information that may not be released under the Freedom of Information Act. Contained in this section is the duty to protect any information that is given to a person in performance of his/her duties and the responsibility to report to DOT when he/she becomes aware that sensitive security information has been released to unauthorized individuals.

Part 1540 outlines the delegation of the Under Secretary of Transportation for Security's authority. Part 1540 also contains prohibitions regarding making fraudulent or intentionally false statements or entry in compliance reports or to apply for an access or identification media that will be used in the aviation system. Also prohibited by part 1540 is interference with screening personnel in the performance of their duties and the carriage of weapons, explosives, or incendiaries by individuals into specified areas at airports. Individual responsibility is also outlined in part 1540: the security responsibilities of employees and persons who access the airport, the responsibilities of persons who wish to enter any area that requires screening and the responsibility of airmen to present certain certifications to TSA for inspection when so requested. Prior to the transition this information was contained in 14 CFR parts 107 and 108.

Part 1542 addresses what was contained in 14 CFR part 107 prior to the transition. These airport requirements for the most part were transferred unaltered from 14 CFR part 107 and primarily address access control and law enforcement support. However, there are some changes in section 1542.209 that addresses fingerprint-based criminal history records checks.

Part 1544 addresses requirements for aircraft operators in the United States. These requirements were contained in 14 CFR part 108 prior to the transition. Part 1544 continues to require that the aircraft operator not permit persons to have unauthorized explosives, incendiaries, or weapons when on board an aircraft. Although TSA will conduct most inspections, if the aircraft operator becomes aware that a person has an unauthorized explosive, incendiary, or weapon, the aircraft operator must not permit it on board.

Part 1546 provides the rules for foreign air carriers that operate within the United States. The security sections that were found in 14 CFR part 129 have been incorporated and reorganized for ease of use. Also several administrative requirements were updated, for example, the procedure for adopting and amending a security program.

Part 1548 provides the rules for indirect air carriers that operate within the United States. Requirements that were previously found in 14 CFR part 109, have been incorporated and reorganized for ease of use. In addition, like part 1546, the administrative procedure for adopting and amending a security program was updated.

Finally, the events of September 11th demonstrated the ability to use aircraft to endanger persons on the ground. An aircraft so used is just as dangerous whether it holds cargo or passengers. Part 1550 was created to require security programs for both passenger and all-cargo operations using aircraft with a maximum certified takeoff weight of 12,500 pounds or more.

September 11th changed how aviation security will be conducted. The TSR's are the beginning of those changes.

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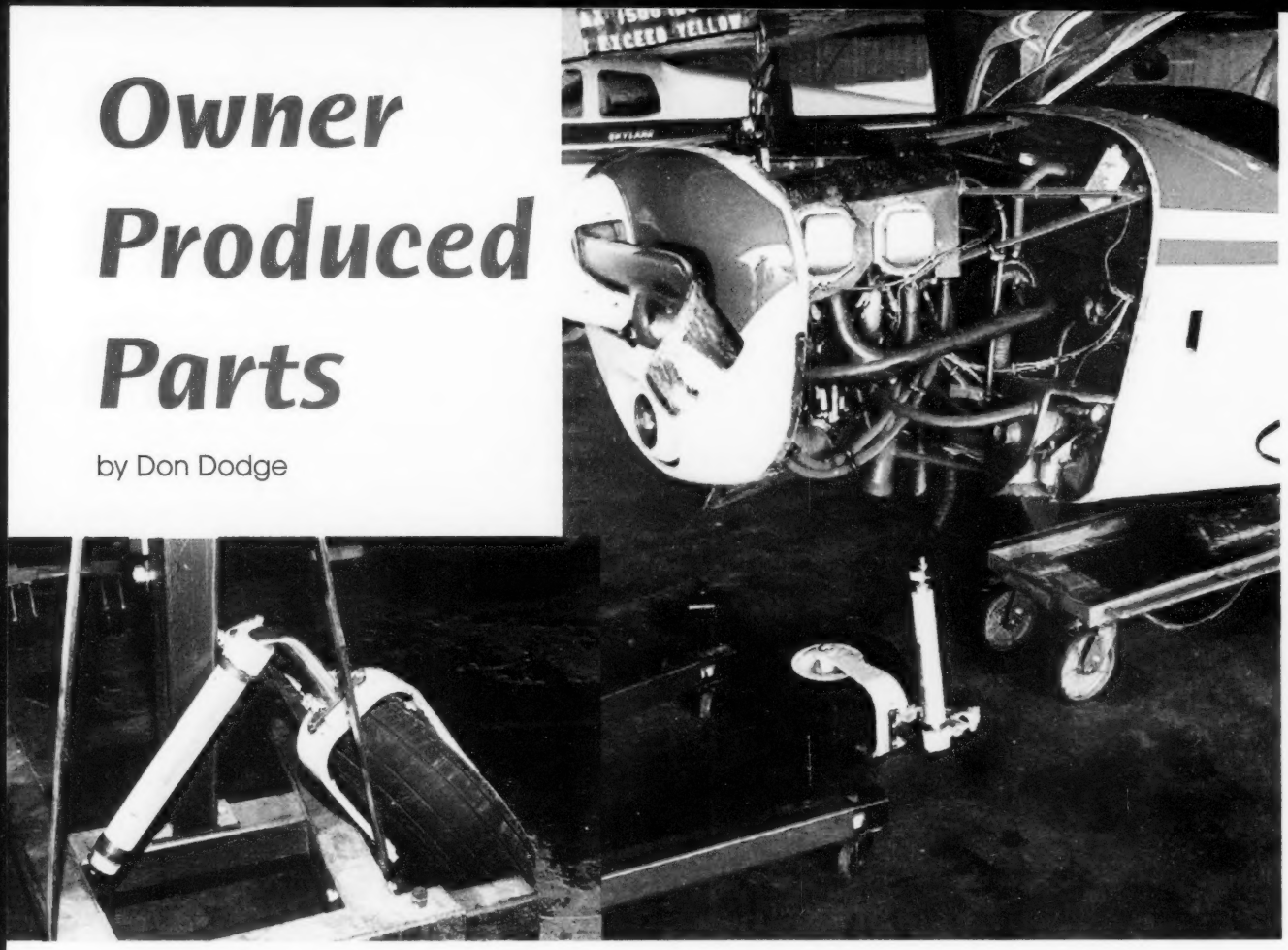
Rebecca Tuttle is specialist in the Air Carrier Policy Division, Transportation Security Administration.

Owner Produced Parts

by Don Dodge



The article was written to address the producing of parts by owner and operators. The article is not intended to imply that maintenance technicians or repair stations may not be able to manufacture parts in the course of accomplishing repairs or alterations. That in itself is another topic for another day.

The sun was setting on another hot August afternoon when the South Carolina Flight Standards District Office received the call from a local airport manager notifying the office that a Piper *Cherokee* had suffered a nose gear collapse during taxi operations. It was reported that the *Cherokee* suffered minor damage; the damage included a prop strike and lower cowling abrasion.

Early the next morning, the inspector assigned to investigate the incident picked up the preliminary information with one hand and his first cup of coffee with the other. As the aroma and warm flavor of his coffee cleared the night's cobwebs from his mind, he eyeballed the incident information. As he read, he thought: "Let's see, *Cherokee* 140, taxi, nose gear collapse, prop, cowling, etc., etc.—wait a minute, *Cherokee* 140? How can a 140's nose gear collapse during taxi operations and cause this kind of damage? An *Arrow*, maybe, but a 140?"

Years of experience told the inspector there was a lot more to this story than had been reported. So on that hot, humid, August morning, he headed for the airport. His investigation uncovered a classic case of an aircraft owner making parts and doing everything wrong. The issues surrounding manufacturing approved parts, who can produce these parts, what makes a part approved or unapproved, all came up in the investigation.

Time and again aircraft owners and maintenance technicians are pressured into making parts. Why do we do it? Why do we take on that liability? Let's look at the facts.

The average general aviation, piston single-engine aircraft is more than 32 years old; the average piston twin is more than 27 years old; and the average turbo prop is 19 years old. The GA aircraft fleet was never designed to last this long, and, when it comes to getting replacement parts to maintain these aircraft, here are a few of the problems we all face.

- The aircraft has been out of production for years.
- The aircraft is an orphan. No one even knows who owns the Type Certificate.
- There is no technical support. If you ask for technical assistance, you are often told that no one really knows much about the air-

craft anymore. The people who were around when the aircraft was built are all retired or dead.

- Economy of scale forces aircraft manufacturers to build parts in quantities that make economic sense for the manufacturer. What this means is that parts are available, in about six or eight months!
- The price of parts is a subject that we aren't even going to talk about.

Sitting in the middle, between a tired broken airplane, its owner, and all these parts problems, is the maintenance technician. Technicians, by their nature, are "can do" people. They live by the motto the difficult we do immediately; the impossible just takes a bit longer. But when it comes to making parts, this "can do" philosophy can really get them in trouble.

Let's examine the rules governing the general privileges and limitations of a maintenance technician (or certificated mechanic as stated in FAR §65.81), and the rule governing a repair station's privileges of certificates (FAR §145.51). Under both rules a technician or repair station may perform maintenance, preventative maintenance, and alterations on an aircraft, or appliances for which he is rated. Nowhere in either rule does it say that the maintenance technician or repair station can produce new parts! However, the maintenance regulations allow the manufacture of parts for repair (see number 11 in next question.

A maintenance tech or repair station can make patch plates, reinforcement splices, and incorporate them into the repair of a part. But again, a, a maintenance technician cannot make a brand new part for sale.

Here are some answers to those earlier questions.

Question: Who can make a brand new part?

Answer: FAA Advisory Circular 21-29, Detecting And Reporting Suspected Unapproved Parts, states that there are eleven ways that a new part can be made. They are:

1. Parts Manufacturer Approval (PMA)
2. Technical Standard Order (TSO)
3. Type Certificate (TC) or Supplemental Type Certificate (STC)
4. TC with an Approved Production Inspection System (APIS)
5. Production Certificate (PC)
6. Bilateral Agreement
7. Any method acceptable to the Administrator.
8. Standard Parts (nuts and bolts)
9. Owner Produced Parts
10. Parts produced per STC instructions as part of an STC modification.
11. Fabricated by a qualified person in the course of a repair for the purpose of returning a TC product to service (which is not for sale as a separate part) under part 43.

All this sounds like bureaucratic alphabet soup, but, of all the ways listed, "Owner Produced Parts" is the one most misunderstood. FAR §21.303(b)2 makes a provision for an aircraft owner or operator to produce parts for maintaining or altering his or her own product. Under this provision, the Owner Produced Part can only be installed in an aircraft owned or operated by that person and the Owner Produced Part cannot be produced for sale to others.

Question: How is it that an aircraft owner can produce a part, but a skilled maintenance technician can't?

Answer: The responsibility follows the money. Most rules are written so the responsibility for an action is placed with the person who has the economic authority to make it happen. (The Golden Rule)

Question: How does this owner-produced rule work? Does the owner have to make the part himself?

Answer: The answers can be found in a FAA Memorandum dated August 5, 1993, in which the assistant Chief Counsel for Regulation makes the following interpretation:

- A part does not have to be solely produced by the owner to be considered an Owner Produced Part.
- The aircraft owner must participate in the manufacture of the part in at least one of five ways for it to be considered an Owner Produced Part.

1. The owner provides the manufacturer of the part with the design or performance data.
2. The owner provides the manufacturer of the part with the materials.
3. The owner provides the manufacturer with fabrication processes or assembly methods.
4. The owner provides the manufacturer of the part with quality control procedures.
5. The owner personally supervises the manufacture of the new part.

As anyone can see, the discriminators for determining owner participation in a new part's manufacture are very specific in the interpretation. Attachment (A) to the 1993 Memorandum clearly stipulates that the FAA would not construe the ordering of a part as participating in controlling the design, manufacture, or quality of a part. The key point is that the aircraft owner must participate in the part's manufacture.

Question: If the part is owner produced, is it also a FAA approved part? Can I install it in the owner's aircraft?

Answer: If the Owner Produced Part has all the characteristics of an approved part, is only installed on the owner's aircraft, and is not for sale, it would be considered a FAA approved part.

There are eleven ways (as listed earlier) to produce an FAA approved part. It doesn't matter if a part is produced under the authority of a PMA, TC, or owner produced, it must have all the characteristics of an approved part. The four characteristics of an approved part are:

1. The part must be properly de-

signed. A properly designed part means that the part's design is FAA approved. Depending on the complexity of the part, a FAA approved design will have the following elements:

- Drawings, specifications to define the part's configuration and design features.
- Information on dimensions, materials, and processes necessary to define the structural strength of the product.
- Airworthiness limitations and instructions for continued airworthiness.
- Any other data necessary to allow by comparison, the determination of airworthiness of later products of the same type.

2. *The part must be produced to conform to the design*. A properly produced part means the part conforms to the FAA approved design. Usually a properly produced part will have the following characteristics:

- The part complies with all applicable structural requirements of its design.
- The materials and products conform to the specifications in the design.
- The part conforms to the drawings in the design.
- The manufacturing processes, construction, and assembly of the part conform to those specified in the design.

3. *The part's production should be properly documented*. A properly documented part provides evidence that the part was produced under an FAA approval and memorializes the production of the part.
4. *The part must be properly maintained*. A properly maintained part means that the part is maintained in accordance with the rules prescribed under FAR Part 43.

It is relatively easy for a part to meet the requirements of the August 5, 1993, Memorandum and qualify as an Owner Produced Part. The four characteristics of an approved part are like the four legs of a table with all four legs "equally sharing" the burden of an approved part. If one leg is missing, the table will fall over. In the same way, if any of the four characteristics of an approved part is missing, then the part may not be FAA approved.

A good example is the case of the *Cherokee* 140 with the collapsed nose gear, mentioned and shown in the beginning of this article. The investigation determined the following:

- The original factory nose strut lower tube was pitted.
- The aircraft owner had a strut tube locally manufactured.
- A technician who knew of the part's origin installed the strut tube.
- The strut tube failed during the first operation, resulting in $7,000+ in damages.

Question: Was the strut-tube an Owner Produced Part?

Answer: Yes, legally it was an Owner Produced Part. The aircraft owner did participate in the manufacture of the part. The owner supplied the manufacturer a design for the part. He did this by giving the manufacturer the old lower strut tube and told him to duplicate it. (Reverse engineer)

Question: Was this a FAA approved part?

Answer: No, the part was not approved because the owner did not provide the manufacturer with an approved design or its equivalent. The part was not approved because it did not conform to the material specifications prescribed in the approved design. The part failed during its first operation and didn't last long enough for maintenance to be a factor.

Question: Did the part producer (aircraft owner) or the maintenance technician who installed the strut-tube violate the FAR? Who should be held accountable?

Answer: The answer is both! The maintenance technician violated the rule the moment that he signed the maintenance records and approved the aircraft to return to service with the knowledge the part he installed was unapproved, that is he apparently understood that the part was produced by the owner. The question he should have asked the owner was "how the part was produced so as to meet the performance rules of part 43.13 of the Federal Aviation Regulations." The aircraft owner violated the rule when he knowingly operated the aircraft with an unapproved and undocumented part installed.

Question: This incident with the *Cherokee* 140 was wasteful, tragic, and dangerous. If the aircraft owner wanted to make an Owner Produced Part, what should he have done?

Answer:

- The owner should have used the original manufacture's prints and specifications (FAA approved design). It would have saved him time, money, and maybe his life.
- Reverse engineer to develop a design if you must, but do your research and submit the resulting design to the FAA for approval. Depending on the complexity of the part, reverse engineering may result in a new design. This design is the aircraft owner's, not the original manufacturer's, and is not automatically FAA approved. The finished part must still meet the requirements of the performance rules of section 43.13. Always contact your local FSDO for guidance.
- Produce the new part to conform to the approved design. Nothing more, nothing less. Stronger is not always better.
- The aircraft owner (part's producer) or the technician who installs the part should document or memorialize the production of the part in the aircraft records. It would be wise if the installing

technician requires the part producer (aircraft owner) to memorialize the parts production in the aircraft records with a statement worded in a similar form as the one below, on this page.

After the part producer memorializes its production. The installing technician must make a maintenance record entry indicating that he or she installed the part. After all, installing the Owner Produced Part is a maintenance function. Aircraft owners can perform preventative maintenance, but not maintenance.

Eliminating the Confusion

A maintenance technician can repair a part, but sometimes the distinction between repairing a part and producing a brand new part is hard to determine. The circumstances surrounding the repair, the part's complexity, availability of manufacturer's data, and industry practices all are determining factors. For a lack of a better term I call making this determination the "Test of Reasonableness."

Example Scenario: An aircraft wing is damaged. The damaged parts include a wing rib, a 24-inch stringer, and wing skin. The aircraft Structural Repair Manual provides material specifications for the skin and stringer. A new wing rib is purchased from the aircraft manufacturer and the technician fabricates a stringer and wing skin using the damaged parts as a template. The technician installs these parts and repairs the wing in accordance with the manufacturer's instructions.

Is this a repair or did the technician produce a new part? The stringer and wing skin do have a part number in the parts catalog for that aircraft, so let's consider the following facts:

- The material specifications were published and readily available.
- The parts were simple and the fabrication processes for the parts involved common tools, skills, and standard industry practices.
- Templates for the reliable reproduction of the parts were available (Design).
- The parts were incorporated into a repair in accordance with the manufacturer's instructions.

In this case, the "Test of Reasonableness" would determine this to be considered a repair, even though the technician did fabricate a stringer and skin.

Reality Check

Maintenance technicians must face a cold hard fact. Aircraft owners can make parts, but they cannot install them. Installing Owner Produced Parts is a maintenance function and only technicians can do that. That makes technicians the "gatekeepers" for parts and guardians against the introduction of substandard and unapproved parts into the fleet. Under this rule the responsibility is the technician's to determine airworthiness before returning the product to service. There is no one else to shift the burden of blame to. The technician's name is on the blame line.

Owner Produced Parts can be summarized as follows:

- Under the Federal aviation regulations, aircraft owners can produce a brand new part for their aircraft; technicians and repair stations can't.
- For a part to be considered "owner produced," the owner must have participated in its manufacture in at least one of the five ways prescribed in the 1993, Memorandum.
- An Owner Produced Part must have all four characteristics of an approved part before it is considered a FAA approved part and eligible for installation.
- Sometimes the distinction between producing a new part and making a repair is hard to determine. When in doubt call the local FSDO and ask for guidance.
- Maintenance technicians are the gatekeepers for parts entering service in the fleet. Technicians bear the lion's share of the responsibility. The technician's name is on the blame line.

The availability of parts is a constant problem with our aging general aviation fleet. As time passes, Owner Produced Parts may be the only alternative available for maintaining some of it. With the passage of time, technicians are going to be increasingly forced to face the challenge of determining the airworthiness of Owner Produced Parts. There are five points summarized here. Remember the five and stay alive!

Don Dodge is the Airworthiness Safety Program Manager at the South Carolina FSDO.

Suggested Owner Produced Part Maintenance Record

Date	Total Time	Work Accomplished
01-01-02	9899.9 hrs.	Manufactured new lower nose strut tube PN# 65280-00. The nose strut tube was produced per FAR §21.303(b)2 (owner produced) and the part conforms to the original manufactures design.

*Ima B. Good PP*123456789 *Aircraft Owner*

Photo provided courtesy of X PRIZE Foundation.

Erik Lindbergh gives the crowd the "thumbs up."

LINDBERGH REDUX

by Phyllis Anne Duncan

Just before 8 a.m. on a late spring morning in 1927, a tall, slender young man strode to his aircraft, one that had been developed and designed for just one purpose. He carried the usual pilot accoutrements with him—maps, charts, etc. Tucked among his things were sandwiches for the trip and some drinking water. Not along for the ride was a radio and a parachute. In 1927 both radios and parachutes (which were commonly used then) weighed a great deal, and for this particular flight, it wasn't so much extra weight that was an issue. Merely, the pilot wanted to cram as much fuel into his aircraft as space and weight would allow. He was about to embark on a flight which many aviation "experts" were claiming couldn't and wouldn't ever be accomplished. Many noted and more experienced pilots than this young air mail aviator had tried and died in the attempt. If he succeeded, the incredible sum (for that time) of $25,000 awaited him, but perhaps more so for him would be the sense of accomplishment. It would be he alone against the elements, in a one of a kind aircraft, crossing a seemingly impenetrable divide—the Atlantic Ocean. The aircraft was the *Spirit of St. Louis*, and its 25-year old pilot was Charles Augustus Lindbergh.

Some 33 and one half hours after he took off, heavily laden with fuel, from Roosevelt Field, Long Island, NY, Lindbergh landed at Le Bourget Airport, France. Averaging 108 mph, he had crossed 3,600 miles, navigating by dead reckoning only, sometimes weather and fatigue making him dip close to the waves of an unforgiving ocean. Upon his arrival in France on May 21, 1927, he was mobbed by an enthusiastic crowd and hailed as a hero. It took the length of time to place a transatlantic phone call (in those days it could take days) for his supporters in New York to know he

had made it safely. Charles Lindbergh, at age 25, when aviation was barely a quarter century old, had crossed the Atlantic non-stop and alone.

The rest of the story is well-known, part legend, part tabloid scandal, part nasty politics, all of it combining to make Lindbergh retreat into seclusion in Hawaii the last years of his life. He died in 1974 and is buried in Hawaii.

Roosevelt Field lives on in name only—it is now a shopping center in Garden City, Long Island, so when aviation buffs and historians began talking about somehow commemorating Lindbergh's flight on its 75th anniversary this year, everyone knew compromises had to be made. But what would be the right event? What was the proper way to acknowledge the bravery Lindbergh had exhibited? Today, transatlantic flights are the norm. There are hundreds of them every day. Hop on a wide-body jet, tune in the in-flight movie, and five to six hours later you're on the opposite shore of the "Big Pond." If your aircraft encountered high winds or fog or icing, as Lindbergh did, you aren't aware of it. Your crew by regulation has to be rested and not subject to the fatigue that can bring on a fatal error. In short, "hopping" across the Atlantic has become routine. What could attract sufficient attention to commemorating Lindbergh's feat and perhaps raise some money for a worthy cause at the same time?

Lindbergh's solo crossing of the Atlantic is one of those seminal events and not just a date to be memorized for a standardized test. What his flight symbolized was conquering something that the "experts" said couldn't be done solo. You know, those not-so-progressive authorities who said that the Atlantic was too wide, that the aircraft couldn't be built to fly that far? After all, far more famous airmen than an airmail pilot of no renown (then) had perished in the attempt. What set Lindbergh apart was, perhaps, the need to discover for himself whether this challenge could or couldn't be accomplished. He was comfortable with flying, and the type of flying he'd done to that point had offered him plenty of practical experience to deal with the rigors of a transatlantic flight. Though he considered it far from routine, he did consider himself the person who could get it done. That simple act of bravery meant that there would be a world where six hours (three if you're on Concorde) you step off a plane on a continent an ocean away. It was a truly remarkable feat for its time, and the public recognized it as such. Lindbergh was met with an adulation that rivals what we today give the shallowest of rock stars. Lindbergh was a true hero in the classic sense-the common man who found it in himself to do an extraordinary thing.

In the 75 years since Lindbergh's flight, we have, among hundreds of aviation accomplishments, "broken" the sound barrier and walked on the moon—other things the experts said couldn't be done. We have followed well on Lindbergh's course for he is a superb example. Yet, what could be done to commemorate a significant anniversary of this event that would do justice to that example?

On May 1, 2002, a tall, slender young man walked to his aircraft, a glass and carbon composite machine, a Lancair Columbia 300. Inside was the latest in global positioning system navigation and a radio—still no parachute, though. Poised on Republic Airport in Farmingdale, Long Island, NY, this $280,000 aircraft was capable of an average cruise speed of 184 mph. Republic Airport is some eight or so miles east of the former Roosevelt Field, and on May 1 there was a bright, nearly cloudless day, unlike the one 75 years before that greeted Charles Lindbergh. If the young man limped a bit on the way to his aircraft, that could be understood. For most of his life he had been nearly immobilized by rheumatoid arthritis, a disease which for many years was untreatable. As it progressed you took higher and higher doses of painkillers, for this is a very painful disease, and there was little hope that you could ever regain mobility. For many years this young man had wanted to do something to commemorate the 75th anniversary of Lindbergh's flight, but it appeared as if he might have to do it from the sidelines. His active participation in any commemoration was important to him, not just as a history exercise.

The young man's name is Erik Lindbergh, and he is Charles Lindbergh's grandson.

Since he was 21, Erik has been affected by the rheumatoid arthritis which progressed to the point where walking was nearly impossible, piloting an airplane unlikely. A bit more than a year ago he began taking what he terms a miracle drug that relieved most of his symptoms and meant he could resume the active lifestyle he'd lived before the disease's harmful effects became so debilitating. Among the activities in that lifestyle was flying. Erik is a commercial pilot and CFI with an Associate of Science degree from Emery Aviation College. With the help of that medication and what he terms "major carpentry" on his body, Erik was in a position to acknowledge his grandfather's legacy in the most appropriate of manners. He decided to fly across the Atlantic solo in the Lancair.

This is the Information Age, after all, and Charles Lindbergh's solo Atlantic crossing came in the last vestiges of the Industrial Era. Erik's flight was state of the art—not only in terms of aircraft but its equipment and ground support as well, e.g., GPS, a space-age mission control center in St. Louis, radios that kept him in constant contact with his mission controllers, weather forecasting information his grandfather couldn't have dreamed of. All of this was a far cry from his grandfather's acknowledged loneliness en route, his lack of radios (I believe they were removed for weight purposes), and his skill at dead reckoning. Many of the challenges were still the same—the aircraft's performance, fatigue, and, the factor that had caused so many transatlantic attempts to fail in Charles Lindbergh's day, weather.

Erik's trip was to follow his grandfather's route as closely as possible, and he began by symbolically flying

from the west coast to St. Louis then on to New York, as Charles Lindbergh did in 1927. The elder Lindbergh's trip probably received more publicity for its day than Erik's did in this global information age. Erik's trip was covered extensively, to be sure, but not commensurate with the column-inches his grandfather received in 1927. We have to cast our minds back and remember there was no television, little radio, and in some places the newspaper came once a month; yet, Charles Lindbergh's attempt had a far reach. If not before he took off, then after his triumphal return from Paris, Charles Lindbergh was a household name. Commonplace and often taken for granted today, aviation was so new and still uncommon then, and it could hold the world's imagination.

Erik's takeoff was routine—he gave a little waggle of the wings when the controller at Farmingdale wished him a good trip. His grandfather's was anything but. According to witnesses from 1927, the fuel-laden *Spirit of St. Louis* staggered into a foggy, rainy sky, some on the ground fearing that a crash was imminent. In the Jimmy Stewart movie, the Spirit disappears dramatically into the foggy sky, spectators peering into the murk until the engine sound fades, then everyone leaves the field to await word of what many felt would be a fatal end to the flight.

Takeoff weather for Erik was near-perfect, and he wouldn't encounter any significant weather barrier until he first approached the Atlantic. Unlike his grandfather, who had to slog through the weather he encountered, Erik was able to call his "controllers" in St. Louis who were able to plot a safe course above the weather. To take advantage of winds, the planned altitudes were between 7,000 and 13,000 feet. To avoid the adverse weather, Erik climbed the Lancair to 17,500 feet. Once clear, he resumed the planned altitudes, with only a brief encounter with additional weather half-way across the Atlantic. In some ways his trip was significant for its "routineness," unlike his grandfather's.

Some 17 hours and 10 minutes after his takeoff, Erik was able to land at the same airport his grandfather did—Le Bourget. He, too, was met by a large and enthusiastic crowd and received the accolades of the general public and aviation enthusiasts around the world. Like his grandfather 75 years before, Erik overcame adversity—this time more physical than physics—and accomplished what is still a rare feat, flying in a single-engine aircraft alone across the once insurmountable Atlantic.

Two brave acts 75 years apart, a proud grandson not intimidated by the legacy of a grandfather he knew for only a short time.

For more information on Erik Lindbergh's flight, go to <www.historychannel.com>, <www.slsc.org>, or <www.lindberghfoundation.org>. On May 20 the History Channel aired a two-hour program on Erik's flight, which is available for purchase as a VHS tape.

In addition to being Charles and Ann Lindbergh's grandson, Erik Lindbergh is a Director of the Lindbergh Foundation and the President of Lindbergh Woodworks, which produces wooden furniture and sculpture. He is a trustee and vice president of the X Prize Foundation, a non-profit organization dedicated to creating a private space tourism industry.

Aircraft Comparison Chart

Statistics	Spirit of St. Louis (1927)	New Spirit of St. Louis (2002)
Empty Weight	2,150 pounds	2,350 pounds
Gross Weight	5,250 pounds	4,260 pounds
Wingspan	46 feet	36 feet
Wing Area	319 square feet	141 square feet
Wing Loading foot and Length	16.1 pounds/square foot28 feet 8 inches	30.2 pounds/square 25.2 feet
Airframe Material	Steel tubing, fabric, and wood	Glass and carbon composite
Engine	Wright JC-5C 233 hp 9 cylinder radial	TCM IO 550 N 310 hp 6 cylinder opposed
Oil Capacity	20 gallons	2.75 gallons
Range "0" Wind	4,110 statute miles	4,110 statute miles
Fuel Capacity	450 gallons in 5 tanks	310 gallons in 3 tanks
Average Fuel Flow	10.9 gallons per hour	12 gallons per hour
Paris Fuel Reserve	85 gallons	65 gallons
Takeoff Distance	2,500 feet	2,000 feet (estimated)
Average Cruise Speed	108 miles per hour	184 miles per hour
Flight Time	33 hours, 29 minutes	19 hours, 35 minutes (planned) 17 hours, 10 minutes (mission elapsed time)
Cost of Aircraft	$10,580 in 1927	$289,000

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For more information and application instructions go to:
http://www.faa.gov/certification/aircraft/employment/

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• April Editorial Off Base

As much as I'm happy for you that you feel things are back to normal, you can take it from this GA pilot that College Park [Airport in Maryland] is not open. Despite the fact that I have already been badged, security inspected, financially inspected, fingerprinted, medically examined, etc., for my Class C airport, I am still not allowed to fly, as a transient, into College Park (as I had pre-9/11) to do business or visit my senators as I have in the past.

I am further moved to write you as one who had an introductory instruction flight in a helicopter from Hyde Executive [Airport also in Maryland] to Washington National [DCA] that such a flight would now be impossible. It is a travesty that these airports are not yet open to the law-abiding taxpaying general aviation pilot. It is a shame that you think close enough is good enough. Could this have something to do with the fact that several FAA employees base their aircraft at Hyde? Until Congress takes back its right to oversee aviation through the FAA, I feel the Executive Branch has stolen through the National Security Council our basic privileges as pilots and bequeathed them to themselves. This is clearly a discriminatory use.

Further I am still unclear as to why we can not fly the Hudson River flyway from New England to the south. We can fly at 1,000 feet all the way down the Hudson to past the George Washington Bridge, but then we must do a 180 within two miles of the World Trade Center [location] and head north. Similarly we can fly up the Hudson past the Statue of Liberty (Ah, the irony! Oh, you get it.) to within two miles of the World Trade Center and again we must turn around. Surely you can open the flyway again, it is a national treasure, a national park in the sky (no noise complaints here), and a safety valve for those of us on the eastern seaboard flyway (beats going 15 miles and 3,000 feet over the ocean or 30 miles and west into the weather shrouded hills of PA). If the government can spend money to build viewing platforms for the public in New York City, surely the flyway can be reopened.

We all must continue to work until all airports are open and we have improved rather than restricted the freedom on the environment in which we fly. I would appreciate your using my tax dollars as my public servant in efforts to that end. We need to spend far less money on fences and tree-cutting and false security Band-Aids™ and far more money on weather stations, runways, and supporting law-abiding taxpaying users of the system.

As Yogi Berra would say, "It's not open until it's open."

Name withheld
via Internet

Thank you very much for this information. At the time the editorial was written, the full reopening of the three DC area GA airports seemed very much a "done deal." However, as a 23-year veteran of the government, I should have known better. All I can do is assure you that the FAA is working with the various security concerns to restore GA operations fully at these three airports and at Washington National. It is sometimes a frustrating process.

Thanks again for giving us a real-world view of things.

• Saudi Tale

I am utterly disgusted with the FAA for allowing the representatives of a foreign country to insult the women of America, particularly women air traffic controllers. When the Saudi prince demanded recently that women air traffic controllers not be SEEN or allowed to do their jobs while he visited, and the FAA caved in to those demands, you have insulted every woman in this country. I'm writing to my representatives in Congress as well as to the White House to complain about your treasonous and hateful decision in this matter.

Margaret Whitcomb
Salem, Oregon

We recommend you check your information sources. FAA Aviation News *has been told "...FAA never received a formal request from the Saudis and never directed any controllers to handle the plane differently than any other aircraft. In short, we never directed that the plane only be handled by male controllers. The Saudis went on a Washington-based Fox TV program saying they never made any such request."*

FAA AVIATION NEWS welcomes comments. We may edit letters for style and/or length. If we have more than one letter on the same topic, we will select one representative letter to publish. Because of our publishing schedules, responses may not appear for several issues. We do not print anonymous letters, but we do withhold names or send personal replies upon request. Readers are reminded that questions dealing with immediate FAA operational issues should be referred to their local Flight Standards District Office or Air Traffic facility. Send letters to H. Dean Chamberlain, FORUM Editor, FAA AVIATION NEWS, AFS-805, 800 Independence Ave., SW, Washington, DC 20591, or FAX them to (202) 267-9463; e-mail address:

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UNIQUE AIRMEN CERTIFICATE NUMBERS

FAA changed its policy on airmen certificate numbers on June 1, 2002. After that date, new airmen certificates will be issued with a unique certificate number assigned by the Airmen Certification Branch instead of the person's Social Security Number (SSN). The policy change resulted from security and privacy concerns since airmen data is public information.

Applicants will still be asked to provide their SSN on their application forms, but the SSN will not be used on their issued certificates. FAA's Flight Standards Service has issued procedures to its offices and designated examiners on how to process certificates issued after June 1. The word PENDING shall be placed in the certificate block on the temporary certificate issued to an airman. If the applicant does not want to provide his or her SSN, then the words DO NOT USE shall be placed in the certificate block.

Certificates issued before June 1 with the applicant's SSN will continue to be used unless the airman requests a unique certificate number. If an airmen with a SSN certificate number requests a unique number than the certificate and/or rating will processed as outlined above.

For those who already hold an airman certificate that uses your SSN and would like FAA to change that to a unique number, you can access the request form at <www.faa.gov/certification/people.htm>, then scroll down to "Services."

RELIEF FOR PARTICIPANTS IN OPERATION ENDURING FREEDOM

The FAA is adopting a Special Federal Aviation Regulation (SFAR No. 96) that allows Flight Standards District Offices (FSDO) to accept expired flight instructor certificates and inspection authorizations for renewals and to accept expired airman written test reports for civilian and military personnel who serve in Operation Enduring Freedom. This action is necessary to avoid penalizing airmen who are unable to meet the regulatory time limits of their flight instructor certificate, inspection authorization, or airman written test report solely because of their service in Operation Enduring Freedom. The effect of this action is to give these airmen extra time to meet certain eligibility requirements in the current rules. This SFAR will expire on May 6, 2004.

For more information, see SFAR No. 96 which was published in the May 6, 2002, *Federal Register* and can be found at <www.faa.gov/avr/arm/nprm.cfm>.

ULTRALIGHT FLIGHT TRAINING WEIGHT EXEMPTION

On April 4 the FAA granted an exemption to Aero Sport Connections, Inc. (ASC), and to the Experimental Aircraft Association (EAA) regarding two-seat, powered ultralight training vehicles that carry certain safety devices, amphibious gear or outrigger floats. The exemption allows the following weight increases to powered ultralight vehicles that have a maximum empty weight of not more than 496 pounds, have a maximum fuel capacity of not more than 10 U.S. gallons, are not capable of more than 75 knots calibrated airspeed at full power in level flight, and have a power-off stall speed that does not exceed 35 knots calibrated airspeed:

- Up to 35 pounds for safety devices intended for deployment in a potentially catastrophic situation
- Up to 70 pounds for each float
- Up to 90 pounds for each amphibious float
- Up to 120 pounds for an amphibious fuselage
- Up to 15 pounds for each outrigger float and pylon on powered ultralight vehicles used for training.

The FAA has found that safety devices, such as emergency parachutes, have been available for over 15 years for use on two-seat ultralight vehicles used in training. The FAA notes that in that time over 200,000 hours of demonstrated operational experience have illustrated that such safety devices provide increased safety during training. These devices have provided similar levels of safety on single-seat ultralight vehicles without adversely affecting their performance characteristics.

Each individual who operates an ultralight vehicle under the authority of this exemption must be familiar with its provisions and must have in his or her personal possession, for each operation, a copy of the authorization issued by ASC or EAA and a copy of this exemption. These documents must be presented for inspection upon request by the FAA.

FAA DEPLOYS FREE FLIGHT TECHNOLOGY AT WASHINGTON CENTER

FAA Administrator Jane F. Garvey announced the successful deployment of an advanced system at Washington (DC) Air Route Traffic Control Center that improves airspace efficiency and capacity by allowing pilots to select more direct routes to their destinations.

Controllers and pilots began using the User Request Evaluation Tool (URET) in April at the Leesburg, VA, facility. This new digital system is one of numerous building blocks in the FAA's Free Flight technology, which is aimed at transforming the nation's air traffic operation with a quick influx of new technology. In addition to Washington, URET is in use at Kansas City,

Cleveland, Chicago, Indianapolis, and Memphis, TN.

URET is a computer program that aids controllers in granting pilot requests to change their flight path for more direct routes or for different altitudes. The software allows controllers to look 20 minutes into the future of a flight path. If a pilot wants a different route, the controller punches in the request. Immediately, the controller is advised if the request is safe. Previously, the controller relied on paper flight strips and mental calculations. As a result of URET, pilots now receive more direct routes and the airlines are saving time and money.

Working with the aviation industry, Administrator Garvey established Free Flight Phase I in October 1998 to provide measurable benefits to airlines and the flying public. By using URET, the airlines have increased direct routings by 20 percent, and are saving $1.5 million per month (combined) in Indianapolis and Memphis airspace.

"The controllers and technicians made the difference," said John Thornton, Director of the FAA's Free Flight Program. "Because they were with us from step one, there were no surprises."

Other Free Flight Phase I tools include: Collaborative Decision Making (CDM) which provides airline operations centers and the FAA with national airspace system status information, including information on weather, equipment availability, and delays. More than 30 airlines and NavCanada, which operates Canada's civil air navigation system, are enrolled as users of the system. CDM helps air traffic control to more easily respond to changing conditions, and leads to better tactical decision making in the airspace system.

Traffic Management Advisor (TMA) forms part of the NASA-developed Center-TRACON Automation System (CTAS). TMA helps controllers manage traffic flow and planning for planes operating at high altitudes between airports, which can enhance airport capacity. Results from Fort Worth, TX, Air Route Center show a five-percent increase in flights arriving into Dallas/Fort Worth International Airport. TMA is also providing savings in fuel costs and decreasing delays at Denver, Minneapolis, Atlanta, Los Angeles, Miami and Oakland air route traffic control centers.

CTAS helps controllers more efficiently manage aircraft on approach to an airport by providing the most efficient use of available runways.

Surface Movement Advisor (SMA) provides aircraft arrival information to airline ramp towers to assist airlines in better managing ground assets (gates, baggage operations, refueling, food service, etc.). Using SMA, Northwest Airlines estimates that it was able to avoid three to five costly diversions weekly, especially during periods of inclement weather.

Building on the success of Free Flight Phase I, the FAA plans to deploy URET to the remaining Air Route Traffic Control Centers in Phase II. URET was conceived and built by MITRE Corp., McLean, VA, and is being fully developed and deployed by Lockheed Martin, Rockville, MD, for use at high altitude centers nationwide.

Airports Authority Fire Fighters Honored

Six members of the Metropolitan Washington (DC) Airports Authority Fire Department, who were among the first on the scene at the Pentagon on September 11, were honored with Life Saving Awards at the 20th Annual Valor Awards held by the Arlington County (VA) Chamber of Commerce on April 10.

The Alexandria, VA Chamber of Commerce recognized the Fire Department for its initial response and ongoing work at the site from September 11 through 21. A total of 112 Airports Authority emergency personnel worked at the Pentagon as part of the emergency response force. In addition to fire suppression, search and rescue, and triage and transport operations, Authority personnel worked with other fire and rescue personnel from the region in planning, safety, logistics, and command functions.

Members of the Metropolitan Washington Airports Authority Fire and Rescue Department recently honored by the Arlington County (VA) Chamber of Commerce. From left to right: Firefighter Cary Henry, Firefighter Joseph Ruffolo, Fire Captain Eugene Harris, EMS Captain Charles Howes, Firefighter Nicholas Buongiorne, and Fire Captain Michael Defina.

Editor's Runway

from the pen of Phyllis-Anne Duncan

History Lesson

In this issue we've commemorated two historical events in aviation history as part of a continuing series leading up to the 100th anniversary of the Wright Brothers' flight. Seventy-five years ago, Charles Lindbergh flew solo across the Atlantic, an event commemorated by his grandson, Erik, this past May (page 22). Fifty years ago, the Experimental Aircraft Association held its first convention, initially called simply "Oshkosh" and now AirVenture (page 1).

One of the difficulties in figuring out which event in aviation history to denote, is that there are so many to choose from, and since aviation is still growing and changing, this will be a dilemma for years to come. There are so many high points that we can't begin to cover them all. Even if we tried, we'd be unable to do them justice. The cursory attention we've given our selected subjects to date has been unsatisfactory to me as a writer and a historian. Aviation has so many firsts, so many significant events, pinning them down to a precious few is hard.

As a historian, I have to put a pitch in for passing aviation history on. A recent study showed that the average high school student in the U.S. would get about 46% on a U.S. history test. I'd like to think that those of us in aviation would do a lot better on an aviation history test. Perhaps that's because aviation history is never dry and pedantic. It has a lot in common with "regular" history—it's a chronology of socially, economically, and politically important events—but it's also dear to our hearts. The allure of aviation cuts across all of society—that is why THE most visited museum in Washington, DC is the National Air and Space Museum. The FAA building is older by about 15 or so years than NASM, but it couldn't be in a better location. When we get too bogged down in bureaucracy, there is nothing better to clear the cobwebs than a lunchtime trip across the street to remind us from whence we came. Because we're adults and not tourists, we keep our reactions to ourselves, but there is nothing more awe-inspiring than to walk into that building and see the *Spirit of St. Louis*, the *Glamorous Glennis*, *Voyager*, and many, many more. The people inside are mostly families with young children, whose faces are rapt as they can see and in some cases touch things many only read about. As a former teacher, every time I see one of those faces, I am moved beyond words.

Family and history have always been part of EAA's mission. It began as a family affair after all in the Poberezny's basement. When you go to AirVenture, you encounter children with that same awe as you see in NASM—with one difference. At AirVenture, you're outside on an airport among the airplanes and pilots. Hands-on history. Living history.

As pilots and mechanics our personal history in aviation is part of the overall story of the growth and development of aviation in America and the world—a dizzying progression from the sand dunes of Kill Devil Hills in the winter of 1903 to the Mars Odyssey spacecraft that just found ice beneath the surface of Mars. Though this past 100 years isn't even the blink of an eye in time, we would be hard-pressed to find another period in history where a technology grew so rapidly to become a key element in business, society, and politics. The information age has "shrunk" the world, but the airplane accelerated that shrinkage in the past 99 years.

Take your children and grandchildren to the museums and to fly-ins and to events like AirVenture, but also take the time to sit down with them and tell them your personal aviation history. Then, they can go out and make some history of their own. Who knows? They might be the first human to walk on Europa (the moon of Jupiter most likely to support some form of life) because you told them your history of aviation.

'Til next time...

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